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JOSH TURIEL,
network services
manager at Holyoke
Mutual Insurance,
says IT managers
have to be tough
contract negotiators.

USERS WIN FLEXIBILITY FROM MICROSOFT

*But configuration options don't slim down
operating system, stem antitrust concerns*

BY PATRICK THIBODEAU
AND CRAIG STEDMAN

Microsoft Corp.'s decision last week to give PC makers more leeway in installing applications on its forthcoming Windows XP operating system may give corporate end users some flexibility in configuring systems. But it isn't doing much to quell antitrust concerns about the vendor's plans to weld more applications to its operating system, say end users and analysts.

The announcement heralds a mixed bag of changes.

Although Microsoft is giving PC makers the ability to offer rival products such as instant messaging and media players

on the XP desktop, the Microsoft applications that perform similar functions remain on the system. A leaner operating system, which some end users say is desirable, doesn't necessarily result.

And while Microsoft decided to let PC makers include an Internet Explorer Add/Remove function for Windows

98, 2000, Me and XP, that feature doesn't actually

remove the browser from the operating system; it just deletes icons and other access points. Internet Explorer technology remains after the Remove function is run. So the browser may still launch when, for instance, the Windows Up-

date feature in the Start menu is used if the alternate browser doesn't support that function, said a Microsoft spokesman.

Complete removal of Internet Explorer would have been the best option for Brad Fox, IS manager at Bertch Cabinet Manufacturing Inc. in Waterloo, Iowa. "Some of the Internet Explorer registry keys wreak havoc with some of our custom

Microsoft, page 65

CA REALIGNS ITS PRODUCT LINEUP

*But even the CEO says
there's more work to do*

BY MARC L. SONGINI
ORLANDO

Customers of Computer Associates say the company is making strides in improving its services and articulating its product messages more clearly, but they add that it still has a long way to go.

At last week's CA World conference here, executives of the Islandia, N.Y.-based software vendor outlined a new product lineup structure, as well as Unicenter 3.0, the latest version of its flagship management software, and new storage and security products.

President and CEO Sanjay Kumar explained that Computer Associates International Inc.'s six new core areas, which were first outlined last month, will fall within one of four product lines. Enterprise management will come under the Unicenter line, storage will be part of the newly christened

CA Lineup, page 16

PRICING ALERT!

FURNALDI/GRAY

Vendors of client/server software are dreaming up new pricing schemes to extract long-term subscription fees from existing customers. This isn't good news for IT managers trying to keep a lid on costs, but we've got advice on how to fight back.

Story by Jaikumar Vijayan begins on page 20.

SERVERS GET USAGE-BASED PRICING

*HP plan benefits those
with capacity spikes*

BY JAIKUMAR VIJAYAN

Hewlett-Packard Co.'s new Pay per Use pricing option for its RISC-based Superdome and Intel-based Netserver families of servers is a good first attempt at true usage-based pricing in the distributed server market.

But the option as announced by HP last week definitely isn't for everyone, cautioned users and analysts. In fact, apart from a narrow set of users who have widely fluctuating workloads, the option could end up costing more than outright

purchase or traditional leases in many cases, they added.

"This is an example of HP thinking out of the box and delivering something that is truly unique," said Tim Daley, a director at beta-tester TRW Inc.'s application services provider group in Washington, Mich.

IBM offers a similar pricing plan, called workload licensing, in the mainframe space. A range of vendors, including Sun Microsystems Inc., Unisys Corp. and HP itself, also offer capacity upgrade-on-demand options under which users install more processors than they need upfront but pay for them only as they are turned on. But

Server Pricing, page 65



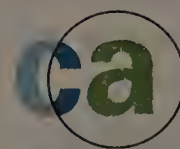


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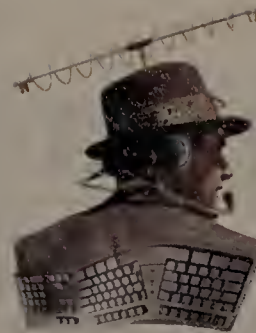
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INTERPLANETARY INTERNET

In this week's Future Watch, learn about Internet technology designed for astronomical distances that could also help terrestrial users. **PAGE 50**



REBUILDING FROM THE GROUND UP

Security manager Mathias Thurman finds himself building the basic security infrastructure for his new employer. **PAGE 48**

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7 Oracle teams with Wingcast in an effort to bring database applications to Ford and Nissan vehicles.

8 Financial services companies like Schwab are installing natural-language search engines to help users navigate their sites.

10 Microsoft Great Plains leaps into the midrange procurement software market, a move facilitated by a partnership with Clarus.

10 Wireless alerts of impending power blackouts are now available in California.

15 Southwest Airlines escalates its fight with Orbitz by pulling its data from travel Web sites.

BUSINESS 35

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38 Online attacks are no laughing matter, so IT security should be a higher priority, says Kevin Fogarty.

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40 Peter Keen says the functionality of wireless devices must be integrated into IT infrastructures.

40 Workstyles: At Sun Labs, risky business is the name of the game, says James Gosling, creator of Java.

42 Project management is a logical career move for many, but getting there can be a challenge.

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31 William M. Ulrich counsels that if you're given the choice of suites or niche development tools, lean toward the suites.

66 Frank Hayes offers an example of why IT should overprepare for data privacy disasters.

MOREONLINE For breaking news, updated twice daily at noon and 5 p.m., visit our Web site. www.computerworld.com/latestnews

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ONLINE

THE ABCs OF CRM

Christina Bauer of Mindful Technologies in Newton, Mass., presents a simple checklist that may help with your CRM implementation. www.computerworld.com/ecommerce

ROI ONLINE

Head to *Computerworld ROI's* Web site for online-only features, including "Walking the Walls No More," detailing how Intel condensed the IT metrics that it tracks to a single sheet of paper. www.computerworld.com/roi

THE PENGUIN STRIKES BACK

Computerworld Community member and Linux user Thomas Corriher takes issue with a recent Bill Laberis column contending that "Linux is full of fanatics" as well as potential. www.computerworld.com/community/os

SYNCHRONIZATION AS A WIRELESS STOPGAP?

Kevin Yen, president of Live Sky Solutions in Boston, outlines the case for synchronization as a practical short-term solution to overcoming the need to develop vast wireless networks. www.computerworld.com/wireless

AT DEADLINE

Microsoft: Revenue Up, Investments Down

Microsoft Corp. said last week that its fourth-quarter revenue will likely come in slightly higher than expected at \$6.5 billion to \$6.6 billion. Microsoft, which did \$5.8 billion worth of business in last year's fourth quarter, said operating earnings for the just-finished period should be in line with its earlier projections. But the company is taking a \$3.9 billion charge from the declining value of stock that it holds in other firms, especially in the cable TV and telecommunications industries, officials said. The lost value isn't seen as temporary, so Microsoft was forced to take a charge against investment income, officials said. The company will report its final numbers July 19.

HomeRuns.com Strikes Out

The online grocery business lost a second vendor within a week Thursday when HomeRuns.com, which has been in business since 1996, closed its doors. The shut-down followed the closure of Webvan Group Inc.'s operations. Officials at Burlington, Mass.-based HomeRuns.com cited their inability to secure additional capital. The July 9 closing of Foster City, Calif.-based Webvan was also blamed on continuing losses and lack of new investment funds.

Correction

Due to a reporting error, a story in *Computerworld* ["Vendors Offer HIPAA Testing, Certification," News, July 2] incorrectly stated how Salt Lake City-based Claredi Corp.'s Health Insurance Portability and Accountability Act (HIPAA) certification service works. The service analyzes electronic data interchange (EDI) transaction files for compliance with HIPAA EDI requirements and generates a report that identifies errors in those files.

Flaws in Wireless Security Detailed

Cracked algorithm, holes in 802.11 spec mean companies need more authentication

BY DAN VERTON
LAS VEGAS

A CRYPTOLOGIST who discovered several gaping holes in the international standard governing the design of wireless network devices and the encryption algorithm meant to protect those networks last week detailed vulnerabilities that could be leaving corporate systems open to hackers.

Ian Goldberg, a cryptologist at Montreal-based security and privacy software developer Zero-Knowledge Systems Inc., along with researchers at the University of California, Berkeley, uncovered flaws in the IEEE 802.11 standard. Goldberg published a paper (www.isaac.cs.berkeley.edu/isaac/wep-faq.html) on the findings earlier this year and made one of his first public appearances about it at the annual Black Hat hacker conference here.

Hardware and software vendors use 802.11 to develop wireless Ethernet cards. The Wired Equivalent Privacy (WEP) algorithm is designed to provide the same level of security for wireless devices that a physical network cable can.

"We have demonstrated attacks on WEP that defeat each of the security goals" it was designed to address, including data confidentiality, network-access control and data integrity, said Goldberg, who showed slides demonstrating the mathematical proof that such exploits are possible to an applauding crowd of hackers and security professionals.

"We can read WEP-protected traffic, we can inject traffic onto WEP-protected networks, we can modify WEP-

protected data," he said.

Goldberg and other security experts recommended that to counter the threat, all companies should use additional authentication systems, such as virtual private networks or IPSec, before allowing data to cross from a wireless network to an intranet or other corporate system. He said some products will be coming out soon to address these vulnerabilities, but they will be proprietary.

Drive-by Hacking

Hackers can often park their cars in a company's parking lot and simply "become a node" on the firm's wireless network — known as authentication spoofing, said Goldberg. "Unlike physical cables, it's really difficult to control how far radio waves go," he said.

Hackers can travel the entire length of Market Street in San Francisco "and basically not lose 802.11 coverage" while picking up wireless LAN signals in their cars, he said.

Mandy Andress, president of Dublin, Calif.-based ArcSec

Technologies Inc., said WEP is particularly vulnerable to hackers in cars. She said there have been cases where hackers have used parabolic dishes to pick up wireless network signals from as far as eight miles away.

One of the most significant problems found in the WEP algorithm includes weaknesses in the way WEP encrypts packets of data using a stream cipher.

Through a series of computations, hackers can eventually uncover the plain text of certain encrypted messages and use those packets to intercept and decrypt messages encrypted with the same key, which is known as an Initialization Vector packet collision.

In addition, many commercial wireless Ethernet cards are vulnerable to hacks stemming from use by all mobile network clients of the same encryption key, said Goldberg.

"Attackers just need to know a single plain-text packet and its corresponding encrypted packet," which can be attained by pinging a company's network or sending spam traffic, Goldberg explained. "It's a correct encryption of the message, so the receiver has no reason to reject it."

That could allow hackers to

do things like inject packets of data into financial transactions that contain changed dollar amounts, Goldberg said.

"WEP is assumed to be cracked now," said Chris Rouland, director of the X-Force vulnerability research unit at Internet Security Systems Inc. in Atlanta. "If you watch enough good traffic on a WEP network, you can crack everything in about 12 hours."

Newton, Mass.-based consultancy Cahners In-Stat Group has forecast that the wireless LAN market will reach \$2.2 billion by 2004. ▀

MOREONLINE

For forums and complete security news, visit our Security Community at www.computerworld.com/security.

Bug Hunter Finds Quarry In Outlook

BY JAIKUMAR VIJAYAN

Microsoft Corp. was working on a patch Friday for a vulnerability in an ActiveX control in its Outlook e-mail software that could let an attacker run malicious code on a victim's computer via either a Web page or HTML e-mail.

The defect lies in the Microsoft Outlook View Control, which allows Outlook mail folders to be viewed via Web pages, according to Microsoft.

The company alerted technical account managers in its worldwide support network to encourage users to apply administrative measures outlined in an updated advisory that the company had just released (www.microsoft.com/technet/treeview/default.asp?url=/technet/security/bulletin/MS01-038.asp).

The bug came to light last Monday when a Bulgarian "bug hunter" notified the software vendor.

Normally, the control should allow users to only passively view mail or calendar data. But

Wireless Standards

NAME	WHEN PUBLISHED	RANGE/DETAILS
802.11	1997	Operates in a 2.4-GHz range, same as cordless phones
802.11b	1999	Also in 2.4-GHz range; it's the standard used by most corporate wireless LANs today
802.11a	1999	Operates in a 5-GHz range; offers less distance capability between base station and client
802.11e	In development	Will provide enhanced security features such as larger encryption keys and 128-bit encryption

Commerce One Enables Cross-Industry Purchase Orders for Seven Exchanges

Various marketplaces join forces to avoid having to build multiple connections

BY MICHAEL MEEHAN

Last year, it was marketplace mania as seemingly every company on earth announced it would launch an online trading exchange.

Now the marketplaces that remain afloat are banding together and forming flotillas to concentrate their strength.

Last week, Commerce One

the vulnerability could expose a function that allows Web pages to actively manipulate Outlook data, thus enabling attackers to delete mail, change calendar information or run destructive code on a victim's computer via Outlook, the advisory said.

Users can expose themselves to the vulnerability by simply visiting a malicious Web page or opening malicious HTML e-mail, said Scott Culp, a program manager on Microsoft's security team.

"It is not needed for users to open or click on attachments" for the control to be invoked, said Georgi Guninski, the bug hunter. Users can trigger the malicious code simply by visiting a Web page or by previewing Outlook e-mail messages, he said in an e-mail to *Computerworld*.

"It is extremely easy to find the vulnerability. . . I found it very quickly after I installed Office XP," Guninski said. "And if Outlook 98 is affected, as Microsoft states in their advisory, this means it has been around for years."

The Active X control was shipped with Outlook 98, 2000 and 2002. Guninski has discovered dozens of similar bugs in Microsoft products.

Culp said Microsoft is working on a patch but didn't say when it would be available. ▀

Inc. in Pleasanton, Calif., announced that it has successfully linked seven marketplaces ranging from national telecommunications exchanges to the energy industry to an aerospace consortium, pushing through 40,000 separate market-to-market purchase orders to date.

The goal of such initiatives is to create an online mall where one company can shop in many exchanges without having to build multiple connections.

"We're never going to have a single marketplace that can encompass everything, so this is something they have to do,"

said Karen Peterson, an analyst at Gartner Inc. in Stamford, Conn. "I think we're going to see a lot more of this in the coming months."

Case in Point

In May, chemical exchange Elemica Inc. absorbed Horscham, Pa.-based rubber industry marketplace ElastomerSolutions.com as a method of expanding its scope. The pair is still building exchange links.

And further linkage may be in store. James Kendrick, an independent chemicals and plastics industry analyst, noted that eight of the 13 investors in Philadelphia-based Elemica are also investors in Zurich-based plastics exchange Omnexus Corp.

"The challenge is to survive

during the adoption phase, and it can't hurt to broaden your scope," he said.

The early marketplace-to-marketplace links are likely to enable procurement but not the mass moving of goods through the supply chain, said Commerce One engineer Bob Glushko.

"We're still looking to create standardized purchase orders industry to industry," Glushko said. "The connectivity issue is really dominated by the comprehension issue."

The Commerce One-linked marketplaces will allow for a certain amount of regional trading. T-Mart, an exchange that serves various industries, will allow The Boeing Co. in Seattle, which trades through the Exostar LLC marketplace in Herndon, Va., to buy goods and services in Germany.

"This gives them another value proposition to their customers, and, hopefully, that value will grow over time," Peterson said. ▀

The Seven Sites

Commerce One has linked together the following marketplaces to share basic purchase orders:

- ▶ T-Mart, multiple industries (sponsor: Deutsche Telekom AG)
- ▶ Enporion Inc., electric and gas industries (sponsors: Allegheny Energy Inc. and KeySpan Energy)
- ▶ Exostar, aerospace (sponsors: Boeing and Raytheon Co.)
- ▶ IgniteMarketplace.net, multiple industries (sponsor: British Telecom PLC)
- ▶ PeopleSoft Marketplace, multiple industries (sponsor: PeopleSoft Inc.)
- ▶ TD MarketSite, financial services (sponsor: TD Bank Financial Group)
- ▶ Commerce One.net, multiple industries (sponsor: Commerce One)

Oracle Moves to Bring its Apps to Drivers

Voice-enabled access would make usage hands-free

BY LEE COPELAND

Believing that the market is ripe for accessing database applications from the road, Oracle Corp. last week announced that it's launching a broad joint-development initiative with automotive start-up Wingcast Inc. to bring its applications to vehicles.

"We expect every one of our applications to be wireless-enabled and voice-enabled," said Larry Ellison, Oracle's chairman and CEO. Ellison said the company hopes to give customers hands-free access to its full suite of applications from the driver's seat.

The Wingcast service would also provide voice-activated cellular calling and access to the Web, e-mail, news, navigation and traffic updates, as

well as Oracle applications.

For example, a sales representative would have voice-activated access to Oracle's customer relationship management (CRM) applications and obtain sales leads from their vehicles, Ellison said.

The service is slated for availability in vehicles from Ford Motor Co. and Nissan Motor Co. by fall 2002. Pricing hasn't yet been determined.

In a bid to keep pace with rival General Motors Corp.'s OnStar service, Ford and San Diego-based Qualcomm Inc. launched Wingcast last July. The company was to develop in-vehicle communications services, known as telematics, for 1 mil-

lion Ford vehicles by fall 2002. But Ford postponed the launch date in March, saying that the Wingcast service wouldn't be available until its 2003 model year vehicles start shipping.

JUST THE FACTS

Wingcast Venture

Oracle and Wingcast launched a joint development effort last week that includes the following priorities:

- Hiring staff for the San Diego-based joint development group
- Building infrastructure to voice- and wireless-enabled Oracle applications
- Developing strategy and a business model to offer more services to drivers

In contrast, GM launched its telematic service as an option on Cadillacs five years ago. OnStar now boasts more than 1.3 million subscribers and is available as a factory-installed option on 36 of GM's 54 2002 models. GM also has deals to equip Acura, Lexus, Audi and Subaru vehicles with the OnStar service.

Wingcast CEO Harel Kodesh, a former vice president of wireless technology at Microsoft Corp., said the two

companies are setting up the joint development center near Wingcast's headquarters in San Diego. Wingcast already uses Oracle's database, enterprise resource planning (ERP) and wireless applications.

But Thilo Koslowski, an analyst at Gartner Inc. in Stamford, Conn., said consumers aren't ready for advanced telematic applications such as voice-activated access to CRM and ERP systems.

"Everyone has seen the OnStar Batman commercial, but not everyone wants the Batmobile," he said. "Oracle is pushing all kinds of applications into the car without thinking about the value to the consumer."

According to a Gartner survey of 10,000 U.S. households in April, approximately 50% were aware of in-vehicle communications services, such as GM's OnStar. Of that number, only 25% expressed interest in basic navigation and traffic services, and less than 10% were interested in e-mail or Web access in their vehicles. ▀

Senators Debate Issues Surrounding Privacy

Opt-in vs. opt-out weighed at hearing

BY PATRICK THIBODEAU
WASHINGTON

A BIPARTISAN group of U.S. senators is pushing for an online privacy law, but the lawmakers sharply disagree on many key issues that could have a major impact on companies, including whether businesses should be required to seek consent, or "opt-in," from users before collecting and sharing personal information.

The Senate Commerce, Science and Transportation Committee, which is widely viewed as ground zero of the privacy debate in Congress because of the concentration of influential legislators, is expected to consider three online privacy bills that committee Chairman Ernest Hollings (D-S.C.) hopes to weld into a consensus bill for full Senate consideration.

But Hollings' approach differs from that of former chairman John McCain (R-Ariz.). McCain backs "opt-out" methods, which would allow personal information to be used unless otherwise indicated.

Network technology "makes it much easier for business to track and trade information about consumers' transactions, whereabouts and preferences," said McCain at a committee hearing last week. "For all the benefits customers derive from customized services, surveys continue to show that Americans are concerned, and should be concerned, about their online privacy. I remain convinced that a federal law is needed."

McCain and Sen. John Kerry (D-Mass.) co-sponsored a privacy bill last year and plan to introduce a revised bill in this session.

Privacy advocates generally favor opt-in, where people give

affirmative consent to a firm that wants to collect and share personal information. Business groups say that if consumers are asked to opt-in, many won't, hurting the ability of companies to offer customized services.

If Congress puts requirements on online businesses, those rules should also apply to off-line businesses, argued Paul Misener, vice president of public policy at Amazon.com Inc. in Seattle. "It makes little sense to treat information collected online differently from the same — and often far more

sensitive — information collected through other media, such as off-line credit card transactions [and] mail-in warranty registration cards," he said at last week's hearing.

Another issue for the committee to resolve is federal preemption of state laws. States are free to adopt tougher privacy laws unless Congress specifically prevents them.

Sen. Ron Wyden (D-Ore.), who co-sponsored a privacy bill with Sen. Conrad Burns (R-Mont.), said that federal preemption is the key issue in privacy legislation, and that if businesses want it, they're going to have to be willing to back a federal law. ▀

Top Privacy Players, Issues

THE PLAYERS

Senators: **Ernest Hollings (D-S.C.)**, chairman of the Commerce, Science and Transportation Committee, intends to reintroduce an online privacy bill. **John McCain (R-Ariz.)** and **John Kerry (D-Mass.)** are also working on a bill. **Ron Wyden (D-Ore.)** is co-sponsoring a bill with **Conrad Burns (R-Mont.)**.

THE ISSUES

Opt-in vs. opt-out standard: This is the top issue. A consensus bill may require both approaches, depending on the type of personal information or data-sharing involved.

The ability to sue, or "private right of action": An IT mistake that leads to the release of customer data, inadvertently or otherwise, could make a company liable for damages of up to \$1,000 for each violation if Congress includes this right in privacy legislation. Imagine if 10,000 customer addresses find their way onto the Internet. No bonus this year.

Data access: Companies may be required to allow customers to see data collected about them. This could be a major challenge for companies that don't have an integrated view of customer records.

Online vs. off-line rules: A privacy rule that extends to off-line data collection means that any corporate database is potentially subject to these privacy rules.

Federal preemption of state laws: States are free to adopt tougher privacy rules unless Congress preempts them. The prospect of complying with different state rules worries many industry groups.

Schwab Taps Natural-Language Search Engine

Spends nine months deploying IPhrase technology on site

BY LUCAS MEARIAN

Like many other financial services firms of late, San Francisco-based Charles Schwab & Co. was getting a clear message from the users of its Web site, Schwab.com.

"We have a good site, but [users said] it's hard to traverse," said Debbie Naganuma, director of electronic brokerage product development at Schwab.com.

Last month, Schwab completed a nine-month installation of a natural-language search technology on its Web site to help alleviate that problem. Schwab said the technology allows its 7.5 million end users to type simple or complex questions and receive answers from anywhere on the site in one step, bypassing the need for other, more complex navigation tools.

In response both to Web sites that contain tens of thousands of Web pages and to a burgeoning number of mainstream consumers looking for financial advice on the Web, natural-language search engines are expected to be deployed at an increasing rate, analysts say.

"When [we] started out looking at [search] vendors two years ago, one driving thing was that it had to be a natural search engine, because

[we] wanted to make the user's experience more comfortable," Naganuma said.

Schwab.com chose One Step, an application created by startup vendor IPhrase Technologies Inc. in Cambridge, Mass. Sue Feldman, an analyst at IDC in Framingham, Mass., said One Step is quickly grabbing attention in the marketplace.

"The feature I'm struck with most is the way they present results. It's easy to understand what has been found," Feldman said of One Step, which tabulates aggregated information from multiple data sources into a chart.

The search engine, which can take into account spelling mistakes, uses an algorithm based on "natural" conversational phrases, as opposed to searches based on keywords.

For example, a consumer could type in, "What are the earnings estimates for GE?" and get the results in seconds.

Prices for One Step run from \$250,000 for an annual subscription to \$700,000 for the

entire software suite.

Schwab.com receives 20,000 to 25,000 hits per week.

"We've yet to see anything that compares to the research capabilities [of One Step]," Naganuma said.

The installation of One Step included about three months spent on peer evaluation within the company, allowing employees to test the technology before subjecting the public to it. That and the rest of the installation went smoothly.

"Based on my other experience with integrating any third-party software or platform, it was relatively easy," Naganuma said. "Where we do run into additional work is that parts of Schwab.com are still very unstructured."

"It's important to have someone with authority enough to ensure the design is proper and who can handle the internal business departments jockeying for position on the Web site," said analyst Ian Rubin at IDC. "And someone who can facilitate things being updated and managed properly."

Without those efforts, no search tool alone is going to satisfy customers. ▀

Charles Schwab
Account Trade Quotes & Research

Search Results

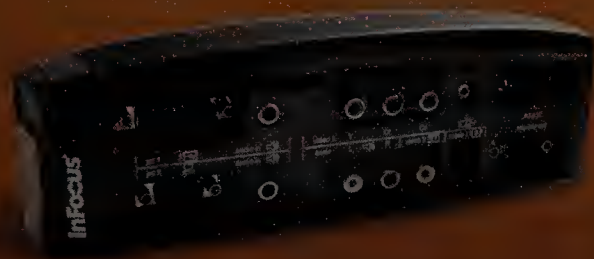
Example: How do I plan for retirement?
You Requested: sectors with projected growth > 150%
Here is the sector information for more than 150% 5 year projected growth

Sector	Industry	Company	Symbol	5-year Projected Growth (%)
Energy	Oil & Gas Operations	Tenaska Inc.	TGC	156%
Healthcare	Biotechnology & Drugs	Moderna Corp.	MRNA	221%
	Pharmaceuticals	Parke-Davis	PDIV	177%
Technology	Computer Hardware	Intel Corp.	INTC	156%
	Electronic Equipment & Components			

Natural-language search technology from IPhrase Technologies will let Schwab.com users get complex questions answered in one step.



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GSA# GS-35F-4138D

BRIEFS

HealthNow Expands Online Services

HealthNow New York Inc. has selected an Internet platform from The TriZetto Group Inc. in Newport Beach, Calif., to expand its online services to members, providers and employers. HealthNow, a \$1.25 billion company, is a Blue Cross/Blue Shield of New York licensee that insures 750,000 New York residents. The company plans to conduct Web-based transactions such as inquiries about eligibility and identification card requests.

Employee E-Mail Monitoring Escalates

According to a study released last week by the Privacy Foundation in Denver, 14 million employees, or just more than one-third of the Internet-connected workforce in the U.S., have their Internet or e-mail use monitored by their employers. Worldwide, the number of employees under such surveillance is about 27 million, the study reports. Inexpensive technology is driving the growth of employee monitoring, according to Andrew Schulman, the Privacy Foundation's chief researcher. Worldwide sales of employee-monitoring software are estimated at \$140 million per year, or about \$5.25 per monitored employee per year, the foundation said.

NuGenesis Alleges Patent Infringement

NuGenesis Technologies Corp. in Westboro, Mass., last week said it has filed a patent infringement lawsuit in U.S. District Court for the District of Massachusetts against Scientific Software Inc. in Pleasanton, Calif. The suit is seeking damages and an injunction to prevent Scientific Software from continuing to infringe on its patent covering the ability of NuGenesis SDMS to store and access visual information generated from a Laboratory Control and Analysis program in connection with a print operation.

Microsoft, Clarus Marry Apps for Procurement Suite

Companies look to push installed, rather than hosted, online procurement software

BY MICHAEL MEEHAN

THREE MONTHS after entering the midmarket supply chain business, Microsoft Corp. has expanded into procurement.

Last week, Microsoft Great Plains Business Solutions in Fargo, N.D., announced that it would integrate its back-office business applications with procurement software from Clarus Corp. in Suwanee, Ga. Microsoft finalized its purchase of Great Plains in April, and this is its first major announcement in the supply chain, back-office accounting software field.

"This is really the first serious effort to reach the midmarket with an internal procurement application instead of a hosted one," said Shawn Willett, an analyst at Current Analysis Inc. in Sterling, Va.

He said the problem with hosted purchasing applications is that IT departments still need to build links into back-office applications, which adds complexity and cost to the equation.

Clarus has been in competition with companies such as Sunnyvale, Calif.-based Ariba Inc. and Pleasanton, Calif.-based Commerce One Inc. in selling half-million-dollar procurement applications to large enterprises.

Many of those companies sought to forge supply chain partnerships similar to the one between Great Plains and Clarus, but most have fallen through during the past year.

"Commerce One and SAP are about the only partnership left standing, and that goes beyond procurement into marketplaces," said Karen Peterson, an analyst at Stamford,

Conn.-based Gartner Inc.

Oracle Corp., SAP AG and i2 Technologies Inc. have also built procurement tools on top of their enterprise resource planning software, though analysts criticized those companies for a lack of functionality in their initial online procurement offerings.

Carman Fors, e-commerce product manager at Great Plains, noted that her company would have faced a similar learning curve if it had attempted to develop a procurement product without Clarus.

With Clarus on board, the new product will be ready to ship in the last quarter. Fors said the first version will pro-

vide a simple data normalization link between Clarus' procurement engine and Great Plains' back-office accounting functions.

A full integration is expected by the middle of next year, possibly leveraging some of Microsoft's new .Net technology to connect the systems.

"We envision triggered purchases through supply chain applications," Fors said. "Your supply chain software would notice your inventory is low and then tell your back-office software to contact your procurement software to make the purchase."

Peterson said that while she isn't sure how long the partnership will last, she believes that it presents a great opportunity for Microsoft to field-test many of its new .Net business process applications. ▀

Midmarket Procurement

Microsoft Great Plains and Clarus have teamed up to provide a unified supply chain/procurement system for midmarket companies. Such offerings had previously been targeted solely at large enterprises.

FEATURES INCLUDE:

► A two-phase rollout starting with a basic offering in the fourth quarter

► A fully integrated second phase that will tie procurement and sourcing functions to supply chain, accounting and CRM systems

► Real-time purchase orders and order processing

Wireless Alerts Join Calif. Blackout Arsenal

Firms might add backup warnings

BY MATT HAMBLIN

Residents and businesses in California can now get wireless alerts of impending power blackouts to help provide system protections.

State officials last week introduced notification features at the My California Internet portal (<http://my.ca.gov>). Users can set up profiles to get alerts of pending rolling blackouts and other types of state information — even lottery scores, according to officials.

The wireless power warnings could tell subscribers when to turn down air conditioners, appliances and lights, said Arun Baheti, California's director of e-government. The last rolling blackouts in the

state were in April. So far, the weather has been mild this summer and demand is low, but officials said that could change at any time.

Deloitte Consulting in New York is the integrator for the portal, which is based on technology from BroadVision Inc. in Redwood City, Calif. The Web site provides alerts to any wireless device, including cell phones and handhelds, using e-mail and Short Message Service.

State officials couldn't identify any businesses that are using the alerts, but some companies expressed interest.

"We might use wireless alerts in the future, but we don't have any wireless devices and would need to purchase those," said Mel Reeves, CIO at ARB Inc. in Lake Forest, Calif. A construction company, ARB is building several power plants and has

been affected by four rolling blackouts at a site in Pittsburg, Calif., each lasting an hour.

Wireless notification at that site could be helpful, since battery backup lasts only 30 minutes, said Reeves. That forces workers to download server data to hard drives, he said.

John Burke, systems and operations manager at Pacific Coast Building Products Inc. in Sacramento, Calif., said he constantly checks electricity demand via his desktop computer at the California Independent Service Operator Web site (www.caiso.com).

"It's worked out so far, but a wireless alert wouldn't hurt," Burke said. Mainly, he said, the company is relying on a diesel generator installed during the Y2k crisis to provide data center backup. The generator provides power for eight hours on a single tank of fuel. ▀

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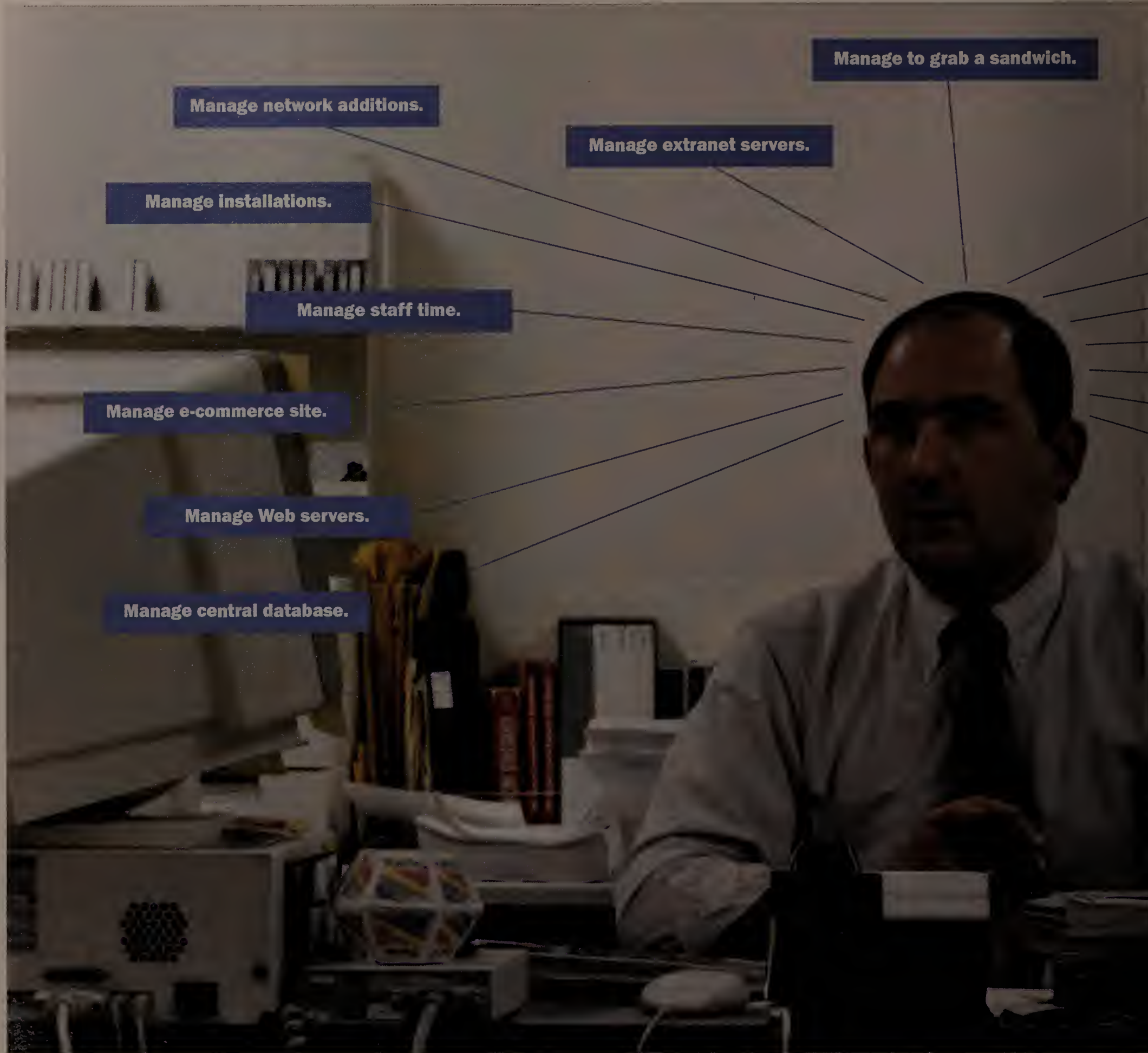
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BRIEFS

VeriSign Helping to Boost .Net Security

Microsoft Corp. will use digital certificate authentication and security technologies developed by VeriSign Inc. to provide tighter data security capabilities for its .Net Internet-based computing services initiative. In exchange, Mountain View, Calif.-based VeriSign will incorporate .Net technology standards into its Internet-based trust services and will deploy Windows 2000 Server on the systems used for Web site hosting, domain name registration and Web site design businesses.

E-Government Act Calls for Federal CIO

The E-Government Act of 2001 was introduced in the U.S. House of Representatives last week. The act calls for the appointment of a federal CIO who would implement information policy, facilitate coordination across federal agencies, set standards and protocols to be used, and oversee procurement and funding. The act would also fortify the Federal CIO Council, which was created in 1996 to help executive branch agencies share ideas and policy recommendations.

Short Takes

Washington-based NASDAQ STOCK MARKET INC. said the launch of its beefed-up Small Order Execution System went off without a hitch. Nasdaq said it expects to eventually integrate the European and Japanese Nasdaq markets into the system, which greatly expands the number of trades in a single transaction and cuts delays in order fulfillment. . . . Sunnyvale, Calif.-based ARIBA INC.'s Commerce Services Network has gained security and transaction integrity certification from the AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS. . . . LUCENT TECHNOLOGIES INC. in Murray Hill, N.J., said that 8,500 of the 10,000 employees who were offered early retirement incentives as a part of the company's job cuts accepted them.

MSN Messenger Outage Leads to .Net Concerns

Analysts question Microsoft's enterprise abilities after week of access problems

BY JENNIFER DISABATINO

THE RECENT week-long access foul-up with MSN Messenger left users angry and analysts questioning Microsoft Corp.'s ability to effectively manage enterprise applications and systems under its .Net initiative.

From July 3 through July 10, up to one-third of subscribers worldwide were unable to access the free instant messaging service from MSN, Microsoft's Internet service provider unit.

The initial problem, according to Microsoft, stemmed from the failure of a disk controller on a database server; the backup server also failed. About one-third of MSN Messenger accounts were on that server, the company said.

While Microsoft estimates that there are 38 million accounts worldwide, messaging analyst Robert Mahowald at IDC in Framingham, Mass., said the number of users is probably closer to 30 million.

Microsoft wouldn't specify

why it took eight days to restore service.

E-mail sent to *Computerworld* by irate MSN Messenger subscribers indicated a high level of user frustration. Joshua Lowe, a systems administrator at AT&T Corp., said he and a handful of colleagues use MSN Messenger to communicate between buildings at the company's Atlanta offices. It's the only free instant messaging service that works through his company's firewall, Lowe said.

"Microsoft itself has provided little to no timely or useful information regarding the status of the system," Lowe said.

Microsoft officials said they have learned from their mistakes and will be able to provide reliable service from now on.

"I feel very comfortable that this type of problem will never happen again," said MSN group product manager Bob Visse. "I would be shocked and amazed if this ever happened again."

But the initial failure and the lengthy restoration process could have implications for large corporations considering



This seriously calls into question Microsoft's ability to adequately provision a reliable enough service for mission-critical enterprise use.

MICHAEL SAMPSON, ANALYST,
FERRIS RESEARCH INC.

Microsoft's .Net initiative.

"I'm very concerned about HailStorm — whether it's a good idea at all," said analyst Michael Sampson at Ferris Research Inc. in San Francisco, referring to the XML-based Web services plan associated with .Net.

"I'm very skeptical that they'll be able to pull it off, particularly in light of the eight-day outage," he said. "If Microsoft themselves can't get it

right and reliable, then . . . this goes to prove that their products are not ready for prime-time use in the enterprise."

The reliability of .Net should be paramount, Mahowald said.

"You need to build a system of autoredundancy and more layers than Microsoft has done," he said. Pushing Web-based applications with .Net means that those applications will depend on the same kind of service Microsoft couldn't restore for a week, he noted.

"This seriously calls into question Microsoft's ability to adequately provision a reliable enough service for mission-critical enterprise use," Sampson said. "After what's happened with MSN Messenger, and the extremely poor way that Microsoft handled it from a communications perspective, unless they were willing to sign guaranteed service uptime with big financial penalties for nonperformance, I would counsel against building an enterprise business case around this technology."

Mahowald said the way Microsoft has chosen to develop and roll out .Net may be overly ambitious, so such problems should be expected. Rival IBM's piecemeal approach to building Web services, on the other hand, is more realistic, he said. IBM's narrower focus at least indicates that it's sensitive to enterprise needs, and it has already begun to address those, he said. ▀

Fujitsu Hopes to Lure Sun, IBM Clients With New Server

High-end model expected this week

BY ASHLEE VANCE

Fujitsu Technology Solutions Inc. (FTS) will step up its presence in the high-end hardware market this week, when it announces a new server to compete with machines from Sun Microsystems Inc. and IBM.

Sunnyvale, Calif.-based FTS is releasing its PrimePower 2000 server with up to 128 processors, looking to attract large corporate customers that have typically chosen Sun or IBM in the North American market. Tokyo-based parent company Fujitsu Ltd. has sold the server in Europe since 1999.

An entry-level version of the server with up to eight processors, available now, will

be priced at nearly \$200,000, according to an FTS representative.

The new hardware is part of the company's PrimePower line of servers that use Sun's Solaris operating system and run on Sun SPARC-compatible processors. FTS uses its own 64-bit SPARC 64-GP chips running at up to 563 MHz on the new server.

FTS has continually stepped up its competition with Sun in the U.S., releasing several new servers this year and making storage deals with Sun rival EMC Corp. in Hopkinton, Mass.

However, one analyst said he

believes it may take some time for FTS to pose a real threat to Sun's U.S. customer base.

"I don't see anything major happening with Fujitsu over the next 12 months that would have a major impact on Sun in the U.S.," said Gordon Haff, research director of high-end architectures at Aberdeen Group Inc. in Boston. "They just don't have a strong market presence today."

In addition to the PrimePower line, FTS also makes an Intel-compatible server line called Primergy. ▀

Vance writes for the IDG News Service.

Southwest Airlines Pulls Flight Information to Hinder Orbitz

Analysts say move may hurt airline

BY JENNIFER DISABATINO

Southwest Airlines Co. last week fired another salvo in its battle with Orbitz LLC by withdrawing its flight data from Airline Tariff Publishing Co. (ATPCO), a company that supplies airline flight and fare information to travel agents, airlines and travel Web sites, including Orbitz.

"We are doing this to send a clear message that Southwest doesn't want to be associated with Orbitz, a site that we feel seeks to eliminate consumer choice through its exclusive agreements with the carriers it's supported by. It seeks to become a monopoly," said a spokeswoman for the Dallas-based economy airline.

Travel agents and Internet travel sites, including Chicago-based Orbitz, use Dulles, Va.-based ATPCO to obtain flight and fare information but not to make reservations.

From now on, the only global distribution system that will publish Southwest routes and fares is that of Fort Worth, Texas-based Sabre Holdings Corp., an Orbitz rival, the Southwest spokeswoman said. But Southwest doesn't open its live, proprietary reservation system to anyone, she added, so travelers who want to make reservations online will have to go to the Southwest Web site.

A spokeswoman for Orbitz, the online travel agency developed by the five largest U.S. airlines, said Southwest's decision will hurt consumers.

"We were not the only people getting [Southwest's] fares through ATPCO. Non-Sabre global distribution systems were getting their fares on the Internet" and then referring customers to book flights directly with Southwest, said Orbitz spokeswoman Carol Jouzaitis.

"Southwest's decision will ultimately harm consumers. It

will now be more difficult to compare fares with other airlines," she noted.

While Southwest is known for going its own way, this move is somewhat bizarre and may hurt the company's image with its customers, said Henry Harteveltdt, an analyst at Forrester Research Inc. in Cambridge, Mass.

"This whole thing between Southwest and Orbitz is turning into a holy war between the two companies," Harteveltdt said. "Southwest has decided to pick up its fares and go home. As a result, Southwest has shot itself in the foot."

In May, Southwest filed suit against Orbitz, alleging that the flight search engine was giving the airlines that support it preferential positioning in search results and was posting circuitous Southwest flight plans in price comparisons against other airlines. Orbitz is financed by Delta Air Lines Inc., Continental Airlines Inc., Northwest Airlines Inc., United Air Lines Inc. and American Airlines Inc. and is supported by 450 other U.S. and international carriers.

Orbitz offered to sit down with Southwest to work out how the airline's flights should be displayed, but Southwest refused, said Jouzaitis. She added that Southwest paid nothing to Orbitz for posting its flight information.

However, Southwest is committed to promoting its flight information on its own site, which accounted for 36% of all of its bookings in the first quarter, the Southwest spokeswoman said. She also said that Southwest doesn't rely very heavily on travel agents for bookings.

Southwest has some legitimate complaints about the flights and fares displayed on Orbitz, Harteveltdt said, citing the fact that some Southwest

fares weren't as prominent as those of Orbitz participants.

However, Harteveltdt said Southwest was also likely concerned about customers seeing lower fares from other airlines, which could tarnish Southwest's low-fare image.

"We suspect that part of Southwest's pulling out of this is they don't want the consumer to realize the emperor has no clothes," he said.

Sabre owns and runs Travelocity.com Inc., which runs one of the leading Internet travel sites and is an Orbitz competitor. Southwest's fares are no longer published on Travelocity's site, however, due to booking problems. Flights confirmed with Travelocity sometimes couldn't be confirmed

with Southwest, the Southwest spokeswoman said. A traveler who arrived at a gate with a Travelocity confirmation may not have been booked on the flight in Southwest's system.

In a more positive development for Orbitz, the site managed to pull off a very successful Web launch, in terms of visitors, according to the Nielsen/NetRatings service.

Launched at the beginning of last month, Orbitz attracted 2.07 million unique, at-home visitors during its first month, an increase of 1.9 million over the number of unique, at-home users who visited the travel site in May, the final month of its beta test. That's the highest increase in traffic to a newly launched Web site since Milpitas, Calif.-based NetRatings Inc. began tracking Internet traffic in 1999, said NetRatings spokeswoman Jennifer Fan. ▀

Troubled Takeoff

The launch of Orbitz has been shadowed by disputes with Southwest.

Summer 2000	April 2001	May 2001	June 2001	July 2001
Government begins antitrust investigation of Orbitz.	U.S. Department of Transportation refuses to block Orbitz, saying it isn't anticompetitive until it does something anticompetitive.	Southwest Airlines sues Orbitz over allegedly incorrect flight and fare information.	Orbitz site officially launches.	Southwest pulls its flight and fare data from ATPCO and thus from Orbitz.

Pharmaceutical Firms Face Tech Hurdles in Clinical Trials

Plagued by lack of standards, immaturity

BY JULEKHA DASH
LONDON

Using technology to speed up clinical trials is gaining steam in the pharmaceutical industry, but companies still face several obstacles that may keep them from reaching the full potential of the new tools.

For instance, Yamanouchi Pharmaceutical Co. is struggling with a lack of data standards for trials conducted globally, said Carl Allison, di-

rector of clinical data management at the Tokyo-based firm.

"At the end of the day, you want a clean database," Allison said last week at a pharmaceutical technology conference here sponsored by London-based SMi Group. During the next year and a half, Yamanouchi plans to standardize how it defines patient data, as well as establish Oracle Clinical as its remote database management system across its global sites, he said.

The pharmaceutical industry began looking into technology to speed up clinical trials two years ago but just started

launching full-scale projects this year, said Mark Anderson, CEO of Arc Consulting Group Inc. in Irving, Texas.

The technology itself isn't the biggest obstacle, said Pam de Rivaz, director of strategy and change management at London-based pharmaceutical company GlaxoSmithKline PLC. Companies "spend a lot of energy selecting a tool and not a lot of thought on actually re-engineering their processes," she said.

GlaxoSmithKline will spend the next year or two establishing a process re-engineering initiative to help employees get used to changes in their work, de Rivaz said.

Another problem is that the IT infrastructure in some countries is too unreliable to implement such systems, said Stephane Rouault, European

head of data management at Strasbourg, France-based pharmaceutical and life sciences firm Aventis SA. Aventis has piloted electronic data management trials but plans to wait until the technology matures before using it on a more widespread basis, he said.

New York-based Pfizer Inc. recently completed two clinical trials in which patients with migraines or overactive bladders recorded drug responses in an electronic patient diary, which was then loaded onto an Oracle database, according to Stuart Pearce, a team leader for electronic data capture at Pfizer.

Pearce said that overall, patients found the technology easier to use than filling in information on lengthy forms, because the screen contained just four buttons. ▀

CA Proxy Tussle Has Customers Cautious

Users say proposed takeover would be disruptive, prefer that company stay as is

BY MARC L. SONGINI
ORLANDO

DESPITE RECENT challenges, including a bitter battle over control of the company, many customers remain upbeat about Computer Associates' future and say it would be best if it remained intact.

Part of Texas entrepreneur Sam Wyly's plan in his proxy fight to oust the board and managers of Computer Associates International Inc. is to divide CA into four separate organizations. But several users

and analysts at CA World here last week took a dim view of Wyly's takeover attempt.

"It's better from the point of view of a customer for it to remain one company," said Arie Berger, manager of the operations and communications systems department at El Al Israel Airlines Ltd. near Tel Aviv. El Al runs Unicenter 2.4 and the CA-TopSecret mainframe security application.

Sorel Jakins, associate director of infrastructure engineering at Brigham Young University in Provo, Utah, agreed.

"Getting new management

would be like having a new company, and it would be disruptive to us," he said.

The university now runs CA's Unicenter application and plans to move to Version 3.0 in the near future, Jakins said.

Bruce Focht, a business analyst at financial services firm J.P. Morgan/American Century in Kansas City, Mo., said CA's management is irrelevant, "as long as they keep supporting my product."

His company uses the Jasmine ii portal to give customers access to financial data via the Web, something that used to be done manually by picking through paper-based reports. However, Focht added that CA so far "had been good at listening to my concerns."

Continued from page 1

CA Lineup

BrightStor brand, security will fall into the eTrust lineup, and the portal, knowledge management, visualization and other technologies will be part of the Jasmine ii middleware offering.

Grasping the CA product lineup has long been challenging and frustrating for many users and analysts. With more than 1,200 products in the CA catalog, it's no surprise that it

has been difficult to navigate. Part of the problem has been that the company was assembled from numerous acquisitions and "was all over the place," said Karl Jackson, a systems specialist at Provo, Utah-based Brigham Young University (BYU), which uses CA's Unicenter management software.

But the company is finally making the lineup much less confusing and easier to grasp, Jackson said.

Nevertheless, Kumar acknowledged that CA has its work cut out for it as it tries to

explain just how the new lineup will help customers.

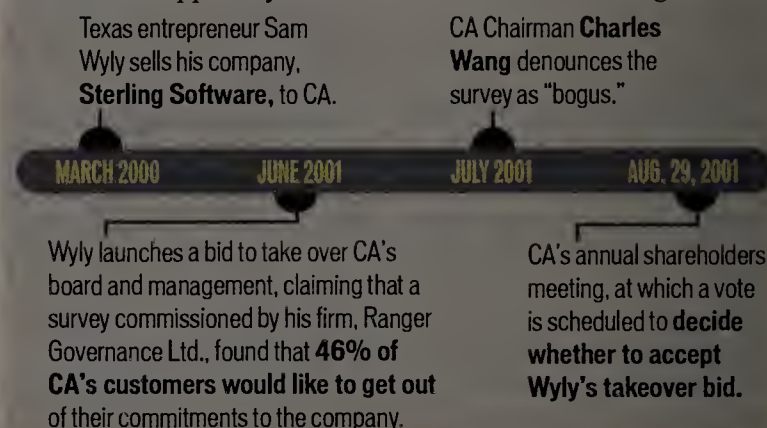
"We have to rely on 3,000 people in the field in 60 countries communicating [the lineup], and we have to rely on all kinds of technical people and business people understanding it, and that's an area we could always do better in," Kumar said in an interview with *Computerworld*.

Users haven't seen the breadth of products CA offers in areas such as security, according to one analyst. "If you look at them on a per-product basis [in security], IBM and CA are probably about dead even," said James Hurley, an analyst at Boston-based consultancy Aberdeen Group Inc. "But if you go outside the point solutions and look at it from the perspective of integration, CA is way ahead of IBM at this point."

As expected, CA made its biggest splash around Unicenter 3.0. However, Unicenter's advanced help desk could use some additional management reporting features, said Mike Stevenson, an enterprise administrator at the Peel Region-

The Story So Far

A lot could happen before shareholders meet in late August.



CA has been working hard to please its users with improved pricing and service offerings, noted Michael Dortch, an analyst at Robert Frances Group Inc. in San Francisco.

"People are starting to see the fruit of those efforts by CA," he said. "Now would be a terrible time to derail them."

Although Wyly didn't attend the show, his investment company published an open-letter

advertisement in *USA Today* last Monday in an attempt to appeal to CA users.

Executives of Islandia, N.Y.-based CA focused mainly on new products at the show, but they did spend some time making their case to users by defending their management practices and their treatment of customers and employees — points Wyly has attacked them on time and again. ▀

AT A GLANCE

Regrouping

CA's core product areas were first outlined last month:

Enterprise management will come under the Unicenter flagship application line.

Storage software will become part of the newly christened BrightStor brand.

Security software will fall into the eTrust lineup.

Web integration kits, portals and knowledge management, and predictive analysis and visualization tools fall under Jasmine.

al Police data center in Brampton, Ontario.

The data center uses Unicenter 2.4 to support 2,000 end users relying on Windows NT and OpenVMS servers. A Unicenter 3.0 beta tester, Stevenson said he wants to see refinements in the system that make more financial-related IT information accessible, such as return on investment or total cost of ownership data for products.

But not everyone is rushing to use the new Unicenter. At El Al Israel Airlines Ltd., based at Ben Gurion Airport near Tel Aviv, the IT department plans to take its time upgrading from Unicenter 2.4 to 3.0, said Arie Berger, manager of operations.

The airline recently went live with Unicenter 2.4, which took a year to assemble. Although CA provided good ser-

vice, "the product was not easy to implement," Berger said.

The application's enhanced business process view feature is of particular interest to Sorel Jakins, associate director of infrastructure engineering at BYU. The university has been beta-testing Unicenter 3.0 and has plans to launch it throughout the campus.

BYU relies heavily on student staffers to do network monitoring, and it's much easier to train them on a product that has an easy-to-follow graphical user interface, said Jakins.

Unicenter Version 3.0 automatically identifies potential problems in the network that could affect priority systems, without needing an IT staffer to drill down deeply and discover them manually, Jakins noted. ▀

New Offerings

Last week's CA World conference drew 10,000 users, only half of last year's attendance. Those who made it to the show heard about the following new products:

■ **Unicenter 3.0**, which CA boasts is a modular enterprise management product with advanced business process views and visualization features.

■ **The BrightStor storage product line and the BrightStor Enterprise Backup application**, which CA says manages multiplatform storage backup operations.

■ **eTrust Internet Access Solution Set**, which CA claims offers companies Web access control for customers, suppliers, employees and partners.



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A black and white photograph of a man, Richard Yoo, standing in a server room. He is leaning against a metal railing, looking towards the camera. The room is filled with rows of server racks, creating a sense of depth and perspective. The lighting is dramatic, with strong highlights and deep shadows.

Richard Yoo
Founder & Chief Technology Officer
Rackspace Managed Hosting

to endure monstrous spikes. And the real-world capability that makes it possible for Rackspace to offer not just great service, but guaranteed service. The fact of the matter is, people who rely on technology rely on AMD. So if your business has to meet expectations for the toughest customers, find out how AMD makes it possible. Learn more at www.amd.com/rackspace

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Vendors Dream Up Ways To Extract More Revenue

New fee schemes for client/server software may actually increase user costs. By Jaikumar Vijayan

A RAPIDLY maturing market for client/server software is driving fundamental changes in the way vendors price, support and upgrade their products.

For software vendors, the goal is to ensure a predictable, long-term revenue stream from existing customers — via subscriptions, services and add-on fees — to make up for sluggish revenue growth from new licenses.

So users need to be extra vigilant when they negotiate client/server software contracts in the next few years.

Pricing changes, combined with a growing user dependency on distributed software, could lock companies into the same kind of costly situations that mainframe users have complained about for years, users and analysts said [Technology, Jan. 10, 2000].

"Vendors are focusing on future revenue streams," said David Floyer, an analyst at IT Centrix Inc., a consultancy in Framingham, Mass. "Where in the past they would have been happy just to get new licenses, they are now focusing on how they can grow revenue from the licenses they already have installed."

Of course, the trend conflicts with users' needs to keep costs down, said David Krauthamer, MIS manager at Advanced Fibre Communications Inc. in Petaluma, Calif.

"It is a concern basically because what vendors are trying to do is lock themselves into user accounts" with long-term

contractual tie-ins, he said.

Specifically, there's a growing trend away from the perpetual, per-user and per-server licensing structures that have been standard in the client/server world for years, said Krauthamer.

Instead, vendors are pushing a variety of new pricing models that present both opportunities and land mines for users.

Perhaps the most prominent example is Microsoft Corp.'s recently unveiled subscription-based purchase option. Called Software Assurance, the option will allow certain classes of Microsoft customers to rent their software for fixed periods of time, starting Oct. 1 [Page One, May 14].

The subscription model could be cost-effective for users who upgrade every time a vendor comes out with something new, but not necessarily for companies that tend to skip product generations.

Microsoft says costs for most users who choose the new option would stay the same or decline over time, but analysts have a different view. One researcher has predicted that costs could soar 68% to 107% for users who upgrade every four years.

Subscription Skepticism

Some users are cynical about the pricing changes. "Companies don't change pricing models because they are looking to get customers huge savings," said Pat Enright, director of information systems at Clark Retail Enterprises Inc. in Oak Brook, Ill.

The pricing changes are Mi-

crosoft's first step toward eventually licensing most of its software as a service. And analysts said other vendors are sure to follow Microsoft's lead.

Others have released online versions of their products hosted by application service providers (ASP), which users can rent or subscribe to on a term basis. For instance, Lotus Development Corp. allows ASPs to deliver a collection of self-service applications and to automatically charge for those licenses based on the number of activated users per month. With most ASP models, companies pay for the software license upfront and strike multi-year maintenance deals so they don't have to deal with upgrades or technical problems.

Oracle Corp. recently added a new wrinkle to the ASP model when it announced that users will be able to run certain versions of its E-Business suite on their own servers while Oracle handles the administration and support work [News, July 2].

Perpetual licenses worked because vendors were able to get customers to keep upgrading their software with the promise of a few new features or upgrade incentives, said Ditka Reiner, president of Reiner Associates Inc., a contract management consultancy in San Francisco.

But market leaders such as Microsoft, Oracle and SAP AG are increasingly selling to a mature base of customers who have been using their products for several years. Such customers aren't likely to move as quickly as they once did to every new release that becomes available, Reiner said.

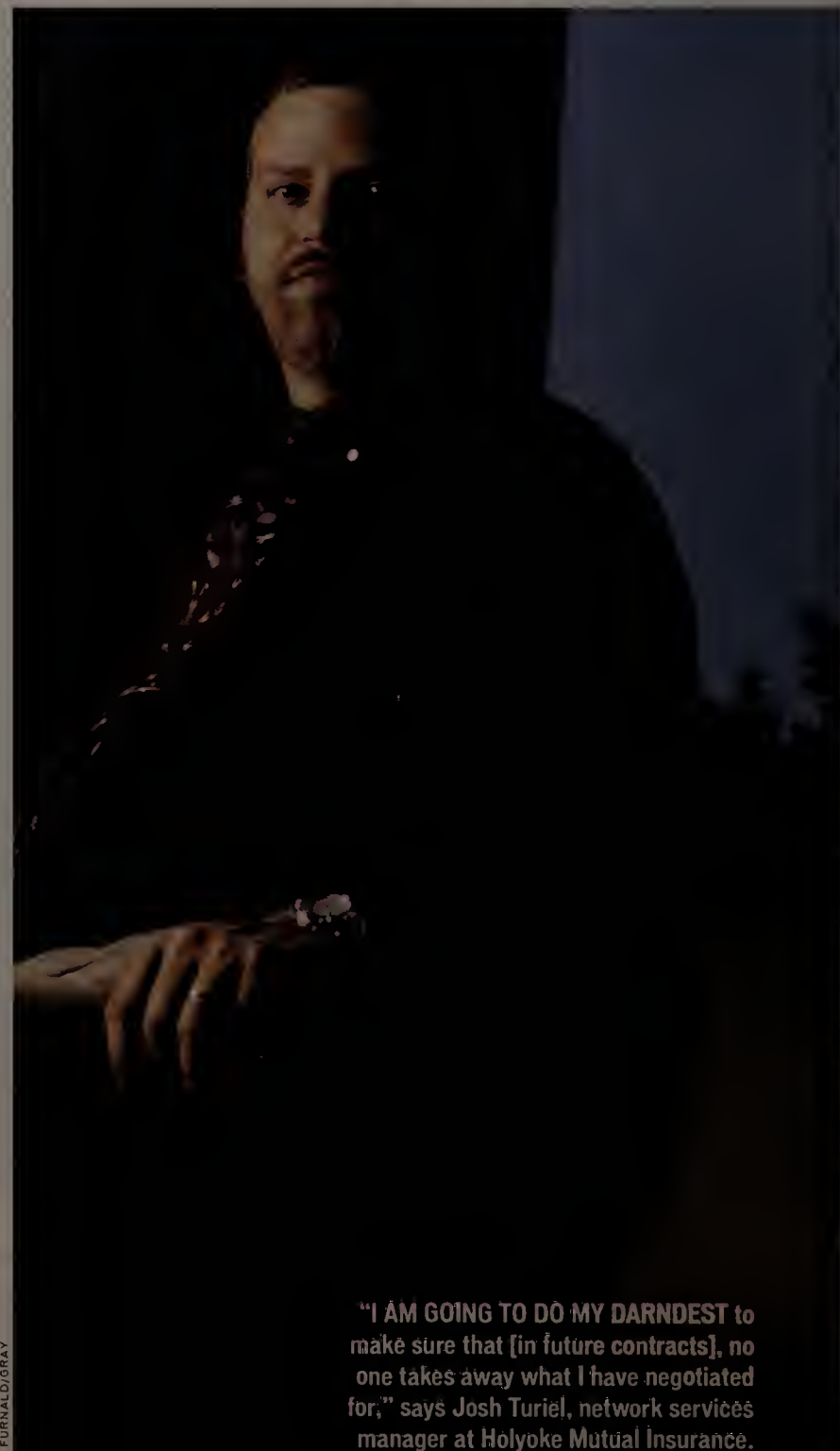
Instead of trying to sell their software outright, vendors will try to get their revenues from long-term contractual tie-ins, such as maintenance, upgrade

and support agreements. Capabilities that were sold as standard parts of packages will come as separately priced options. Upgrade services will be tied to technical support; users won't be able to get one without the other.

The trend is already raising concerns at Millipore Corp.,

where support costs for distributed software have risen from 12% of a product's purchase price a few years ago to more than 20%, said Paul Kaminski, director of contracts at the maker of purification products in Bedford, Mass. He said Millipore is paying for upgrade options and bug fixes that it rarely or never uses.

"From a customer standpoint, we are simply not seeing an equivalent value for the increase in support costs," Kaminski said, adding that if costs keep escalating the way they are, the company may start looking at other options, such as Linux.



"I AM GOING TO DO MY DARNDDEST to make sure that [in future contracts], no one takes away what I have negotiated for," says Josh Turiel, network services manager at Holyoke Mutual Insurance.

Migrating to Linux wouldn't be a trivial task, Kaminski acknowledged. "But you'd do it if you reach breaking point," he said.

In many respects, the situation in the client/server market today is no different from what mainframe users faced back in the late 1980s and the early 1990s, Floyer said.

For IT managers, capacity planning and asset management are the keys to coping with the new pricing models, said Marie T. Reeve, vice president of Cicala & Associates LLC, an IT procurement consultancy in Hoboken, N.J. "You need to know what you have and what you need to secure the appropriate licenses."

To avoid getting caught in a bad deal, consultants and savvy IT managers offer the following recommendations:

■ **Get it in writing.** Be sure the contract identifies the license, support and maintenance implications of adding users or upgrading functions.

■ **Establish a good software asset and license management program.** Know what software you own and how many people are really using it. Know when software contracts are due to expire or come up for renewal. This information is crucial when negotiating software contracts.

■ **Look ahead two or three years.** Negotiate contractual clauses that address what would happen if you suddenly downsized or decided to reduce the use of a particular product.

The cost of not doing that can be very high, warned Forrest Eudaily, an associate director at Whitehall-Robins Healthcare, a \$1.7 billion maker of over-the-counter drugs in Madison, N.J.

Because of the way Whitehall-Robins negotiated a mainframe software contract several years ago, it's still paying the same maintenance fees on the software, even though actual usage has dropped to a fraction of what it was a few years ago.

"When you talk with your vendor, you need to have a few 'what-if' scenarios that are contractually spelled out if you don't want to get locked into a huge annual license expense," said Eudaily.

■ **Know your upgrade profile.** If your company upgrades frequently, it might make sense to get on a software subscription service or upgrade plan. But if your typical upgrade cycle runs more than four years, it might be better to purchase outright, Reeve said.

That's because the cost of paying for

an upgrade option fee annually for five years will be almost the same as buying a product outright once every five years, she said.

■ **Prepare for vendor mergers.** Make sure the contract terms don't change if the software vendor is acquired or merges with another company.

Holyoke Mutual Insurance Co. is learning that the hard way. A few years ago, the Salem, Mass.-based firm purchased a multiyear maintenance contract on an enterprisewide storage product from a vendor that was later acquired. After the acquisition, Holyoke lost a crucial capability it had negotiated and paid for in the original contract relating to the number of servers on which it could do backups, said Josh Turiel, Holyoke's network services manager. Now the company's looking for another vendor.

"Needless to say, we got screwed by that," Turiel said ruefully. "I am going to do my darndest to make sure that [in future contracts], no one takes away what I have negotiated for."

■ **Centralize purchasing as much as possible.** For instance, instead of having multiple business units separately deploying their own customer relationship management software using per-processor licenses, it may be cheaper to run them all on centralized servers using a single enterprisewide license.

■ **Have a realistic tally of how many end users will actually use the application.** An enterprise license based on the total number of company employees may be far more expensive than one based on the number of actual end users.

Companies don't change pricing models because they are looking to get customers huge savings.

PAT ENRIGHT, DIRECTOR OF
INFORMATION SYSTEMS
CLARK RETAIL ENTERPRISES

None of the licensing models are inherently bad. The danger lies in getting into long-term deals with the wrong model, noted Advanced Fibre's Krauthamer.

That's why Krauthamer says he loves the short-term agreement he negotiat-

ed with his database vendor. It has allowed him to test the software inexpensively for six to nine months — and pay for it only after it demonstrates value.

"The approach really minimizes the risk," he said. And it "helps out greatly in avoiding the train wrecks" he added. ▀



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Bush Plans National Cybersecurity Board

Panel of senior security officials, rather than single czar, would lead coordinated effort

BY DAN VERTON
WASHINGTON

THE BUSH administration plans to create a board of senior national security officials to oversee the federal government's critical infrastructure protection efforts, eliminating the idea of designating a single cybersecurity czar, sources said last week.

The move reportedly was agreed upon during a July 2 meeting with President Bush, who gave National Security Adviser Condoleezza Rice and other officials the green light to prepare a draft executive order that would set up the Cybersecurity and Continuity of Operations Board. The sources said the meeting lasted for more than an hour, though initially scheduled for just 20 minutes, and resulted in a proposed plan that's now being circulated for agency comment.

A final version of the order is expected later this year. Sources on Capitol Hill who asked not to be identified said the proposed structure eliminates the notion of giving cybersecurity responsibility to one official, in favor of appointing a board with representatives from the Defense, State and Commerce departments, as well as the intelligence community and other government agencies.

Richard Clarke, the longtime national coordinator for security, infrastructure protection and counterterrorism at the White House, is seen as the leading contender to be named chairman of the proposed panel. Under the new structure, Clarke would likely give up his counterterrorism role in favor

of exclusive cybersecurity duties, according to the sources.

Ken Watson, director of critical infrastructure protection at Cisco Systems Inc. and president of the private-sector Partnership for Critical Infrastructure Security in Washington, said the general reaction from corporate officials to the draft presidential order has been positive.

"No single government agency can do all that's needed [to protect technology infrastructures], especially when that includes liaison with industry, oversight of federal budgets and international cooperation," Watson said. "We [think] that a board headed by a presiden-

tial adviser provides the right breadth and emphasis."

Kim Kotlar, an assistant to Rep. Mac Thornberry (R-Texas), said establishing a high-level cybersecurity office would be a good first step in the government's approach to the problem. However, "there are many unanswered questions on how such an organization would work and what its mission would be," she said.

The new plan also leaves open the option of allowing the tenures of the National Infrastructure Assurance Council (NIAC) and the National Security Telecommunications Advisory Committee members to expire on Oct. 1, according to sources familiar with the draft order. Just before he left office in January, former President Bill Clinton appointed 21 people, many of them longtime



THE ASSOCIATED PRESS

RICHARD CLARKE is likely to chair the new cybersecurity panel.

Democratic Party supporters, to the NIAC. Terminating those appointments would simply be a way for the Bush administration to put its own team in place, the sources said.

Harris Miller, president of the Arlington, Va.-based Infor-

mation Technology Association of America and a member of the NIAC, said he would still prefer to see Bush name a cybersecurity czar in order to give companies and trade groups a single point of contact on security issues.

The proposal to create a centralized, coordinated security effort makes sense if it's done properly, Miller added. "The crucial challenge of this effort will be to ensure that the leadership from the White House is meaningful and that a new 'talking shop' is not created, where problems are discussed but solutions not found," he said.

Sources close to the White House said the executive order is likely to be issued in September, when the next version of a national plan for protecting information systems is scheduled for release.

However, the sources said publication of the next version of the national plan will likely be delayed to allow the proposed new board to put its own imprint on the document. The plan was initially released in January last year. ▀

Hole Discovered in Check Point Firewalls

Proprietary protocol puts networks at risk

BY JAIKUMAR VIJAYAN

A vulnerability in Check Point Software Technologies Ltd.'s FireWall-1 and VPN-1 firewall products may allow intruders to tunnel illegitimate traffic into or out of corporate networks.

The hole was discovered last month by Inside Security GmbH, a spin-off of the University of Stuttgart's security team in Germany. The hole could be exploited to passively snoop inside corporate networks or to launch certain types of denial-of-service attacks, according to the CERT Coordination Center security response team at Pittsburgh-based Carnegie Mellon Uni-

versity, which issued a bulletin on the vulnerability last week.

"This is a pretty serious vulnerability [because] Check Point is one of the most widely deployed firewalls on the Internet," said Ian Finlay, a member of the CERT team.

The vulnerability involves Check Point's proprietary Reliable Data Protocol (RDP), which is used in the company's firewalls for internal communication among software components. By default, VPN-1 and FireWall-1 allow RDP packets to traverse firewall gateways to simplify encryption setup, according to Check Point's advisory.

Under some conditions, malicious packets with RDP headers could be constructed and allowed through the firewall.

"It would be a rare and obscure instance" for anyone to

take advantage of this vulnerability, said Greg Smith a director at Check Point. "We know of no customers who have been affected by this."

According to Smith, only authenticated and authorized firewall administrators would be able to take advantage of the vulnerability to create problems. "It in no way allows any external hacker to penetrate or attack networks," he said.

Users can get around the problem by installing a patch from Check Point. Until the patch can be applied, users can configure their routers to block access to the port that's exploited by the vulnerability, CERT said in its advisory.

Although no security incidents related to this vulnerability have been reported, CERT is recommending that all affected sites upgrade their

software as soon as possible.

"The thing to keep in mind is that the very nature of a firewall is to block traffic from reaching your internal network. This is a situation where that assumed fundamental protection [is breached]," said CERT member Shawn Hernan. ▀



This is a pretty serious vulnerability [because] Check Point is one of the most widely deployed firewalls on the Internet.

CERT TEAM MEMBER IAN FINLAY

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BRIEFS

Compaq Moves to Cut More Jobs

Compaq Computer Corp. last week announced plans to lay off another 4,000 workers because of continued weak demand for its systems. That brings the total number of jobs due to be eliminated this year by the computer vendor to 8,500. Compaq said it expects second-quarter operating earnings to be consistent with projections by financial analysts, with revenue coming in at about \$8.4 billion – a decrease of 9% on a sequential basis and \$600 million less than the company's original goal. The company indicated that more cutbacks are needed to cope with an increasing global slowdown in IT spending.

AuroraNetics Agrees To Cisco Buyout

Cisco Systems Inc. said it has reached an agreement to acquire AuroraNetics Inc., a privately held company in San Jose. Both companies' boards of directors have approved the \$150 million all-stock deal. Cisco said it wanted the AuroraNetics chip technology gained through the purchase to help service provider customers create "resilient packet-ring" networks that will carry IP and Ethernet traffic at 10G bit/sec.

Short Takes

ALCATEL SA announced plans to lay off an additional 2,500 employees at its U.S. operations, the third U.S. workforce cutback made by the telecommunications equipment maker since early April. . . . **NCR CORP.** said its second-quarter profits will likely be almost 40% less than earlier analyst projections because of deferred purchases by some users. . . . **STANDARD AND POOR'S** lowered its ratings on Mountain View, Calif.-based **SILICON GRAPHICS INC.**, saying the company's outlook is negative because of a declining revenue base, ongoing losses and limited financial flexibility.

Deal Advances EMC's Move Into NT Space

Joins venture with Microsoft, Accenture

BY LUCAS MEARIAN

AN E-COMMERCE joint venture backed by Microsoft Corp. and Accenture has set up EMC Corp. to provide storage services for Windows 2000, SQL Server and Exchange customers.

Avanade Inc. said last week that the deal will allow it to expand its offerings from mainframe to networked storage technologies. For storage market leader EMC, the deal provides a foothold in the Windows NT server market, one of the fastest-growing sectors in the storage industry.

Don Swatik, vice president of global alliances at Hopkinton, Mass.-based EMC, said his company has made inroads into the NT environment during the past two years and that the partnership with Avanade will greatly advance that effort.

"We're obviously seeing NT as a very significant growth area," he said.

Tony Prigmore, an analyst at The Enterprise Storage Group Inc., a market research firm in Milford, Mass., said the partnership could be a boon for EMC, which recently announced layoffs and big drops in sales and earnings. Earlier this month, EMC announced its second profit warning in four months, indicating that second-quarter profits will likely be only approximately one-third of what was expected.

"Being selected as the storage building block for Avanade means that you'll be recommended to Microsoft's premier NT client base as the de facto enterprise-class infrastructure," Prigmore said.

Seattle-based Avanade, which was formed in April 2000 as a nearly \$1 billion joint

venture between Microsoft and Chicago-based Accenture, designs, builds and deploys customized IT architectures for Windows customers. Avanade has relied on direct-attached, mainframe storage architectures, but its alliance with EMC will now place it in the storage-area network (SAN) arena, where many of

its customers already have IT architectures.

"Over time, storage hardware can be commoditized," said Kevin Adams, director of technology alliances at Avanade. "It's truly the software that can bring out the unique characteristics of the hardware, and clearly, EMC is years ahead with the capability of hardware and software working together."

Adams noted that the deal

ATG Recalibrates Strategy For E-Commerce Line

Struggling vendor ports suite to run on other app servers

BY LEE COPELAND

Struggling Art Technology Group Inc. (ATG) last week detailed plans to port its suite of e-commerce applications to competing platforms, a strategy that analysts characterized as a necessary but risky move.

Cambridge, Mass.-based ATG said its application suite will run on Web application servers from BEA Systems Inc. in San Jose, Hewlett-Packard Co. and Palo Alto, Calif.-based iPlanet by year's end. ATG will continue to support its own flagship Dynamo application server, but the new strategy will put greater emphasis on its application set, said Jeet Singh, ATG's CEO.

ATG's suite includes a commerce server with storefront and online selling functionality; a scenario server for providing and defining e-business relationships; and a personalization server for targeting online customer shopping patterns. ATG's Dynamo application

server is currently required to run those applications.

"It's going to be a tough transition for ATG, because what will make anyone buy the [application] server now?" said Jim Murphy, an analyst at AMR Research Inc. in Boston. "The larger companies have already standardized on IBM and BEA, so it will be a struggle for them to distinguish their applications against the rest."

Singh said adopting an "ag-

What's In It For EMC

The NT storage market:

► Accounted for about one-third of last year's **\$34B** total storage market

► Is projected to **grow at 14%** this year

SOURCE: ENTERPRISE STORAGE GROUP INC., MILFORD, MASS.

will also offer some money-saving advantages to customers using EMC's Symmetrics and Clariion product lines because they won't have to retrain IT professionals, and "in many instances, you can plug [our Microsoft NT servers] into the same SAN." ■

nostic approach and supporting some other platforms" was the best option to stay competitive in the current economy.

ATG, as well as rivals BEA, HP, IBM and iPlanet — an alliance between Sun Microsystems Inc. and Netscape Communications Corp. — each support Sun's Java 2 Enterprise Edition (J2EE) specification.

Compatibility with J2EE should make it easier to run ATG's applications, said Randy Heffner, an analyst at Giga Information Group Inc. in Cambridge, Mass.

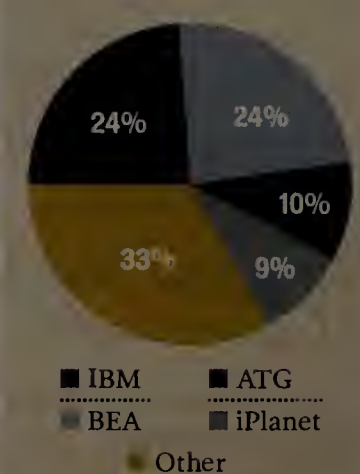
"The promise of portability [among J2EE application servers], though not perfect, is pretty good," he said. "It bodes well for J2EE, and [J2EE support] will help ATG sell into customers who don't want another application server."

Heffner said IBM and BEA should gain market share this year, though it's too early to tell which vendors will lose market share. Application pricing on the new platforms hasn't been determined.

Earlier this month, ATG laid off 220 workers and issued a warning about its second-quarter earnings. ATG said it expects to post a loss of 17 to 19 cents per share on revenue of about \$34 million for the period ended June 30. ATG's stock closed at a 52-week low of \$3.48 per share last week. It peaked at \$126.88 last July. ■

The Marketplace

Market leaders last year in the J2EE-compatible application server market



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MARK HALL

Farewell to FUD

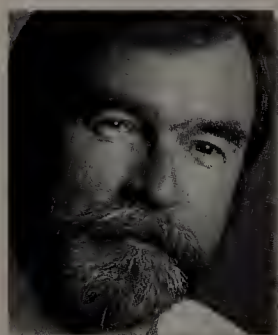
LISTENING TO MICROSOFT executives react to the U.S. Court of Appeals ruling late last month, you'd think Scott McNealy had just embraced Windows and announced that the only java offered at Sun was from baristas. It was that surreal.

The Redmond crowd sounded so upbeat, it was difficult to keep in mind that they were endorsing a decision that convicted their company of breaking the law. And not just any law — the Sherman Antitrust Act.

Sure, Bill and Steve can spin the decision as a vindication for product innovation and software bundling. But only up to a point. The appeals court said that as a monopoly, Microsoft can't bundle software in ways that protect its monopoly. And because Microsoft has accepted the court's decree so readily, it must change its ways.

As an IT manager, you should now be able to confidently deploy applications that depend on technology, from Oracle databases to RealNetworks' streaming media, without worrying that Microsoft will leverage Windows to undermine your choice. That would clearly be illegal.

By admitting its monopoly status, Microsoft has also eliminated one of its most potent marketing weapons: fear, uncertainty and doubt (FUD). Instead of using its monopoly to dis-



MARK HALL is *Computerworld's* West Coast editor. You can contact him at mark_hall@computerworld.com.

lodge a competing product, Microsoft will have to compete on the merits of its technology.

Some doubt that Microsoft can change its spots. But on the issue of OEM licensing, which was held as a specific antitrust violation, the company announced last week that it has reversed its previous limitations on what Compaq, Dell, Gateway and other PC makers can do with Windows in key areas such as icon placement and Start Menu options.

And it plans to add Internet Explorer to the add/delete program in Windows XP.

That shows good faith. It could be a signal that the company intends to apply its vast fortune and engineering talents to building great products that compete freely in the market, instead of being dragged to success by Windows interdependencies.

But it's only a beginning — and it bears close watching. Hopefully, what IT will see is a lot more cool technology and a lot less market-cooling FUD. ▀

PIMM FOX

Project a Mess? A Charter Can Help

PROJECT MANAGEMENT doesn't get people energized unless something goes wrong. Yet sorting out responsibilities, resources and direction once a project is under way is as difficult as fighting multiple wildfires.

That's why a written and signed charter explicitly acknowledged by all participants is crucial to a successful IT project — especially since most IT projects involve multiple users and stakeholders.

Take the case of the National Interagency Resource Ordering and Status System (ROSS).

This IT project, developed by the National Wildfire Coordinating Group, is a software program designed to automate the ordering, status and reporting process for people and equipment needed to respond to wildfires and other emergencies, such as tornadoes and hurricanes.

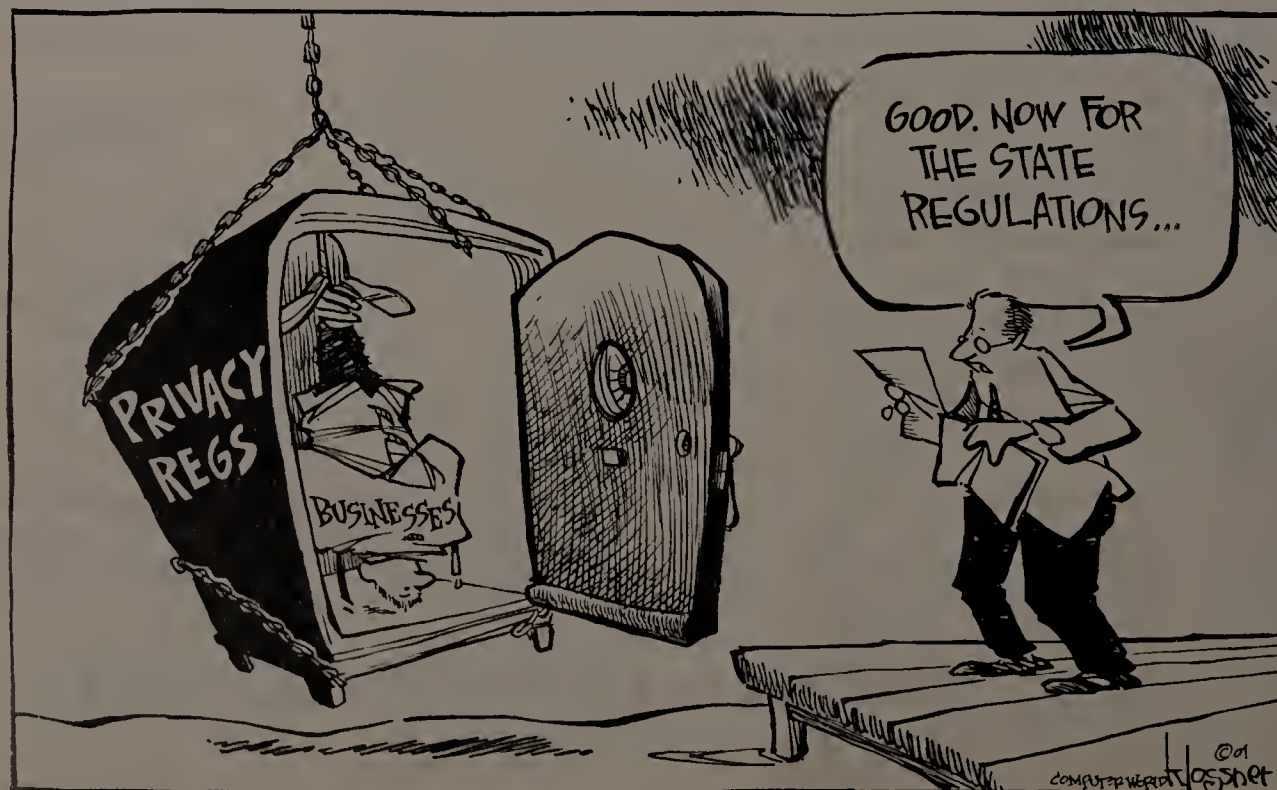
Several government agencies, including the Bureau of Indian Affairs, the Bureau of Land Management, the U.S. Department of the Interior, the U.S. Fish and Wildlife Service, the National Park Service, the National Information Technology Center and the U.S. Forest Service, as well as state representatives, had to buy into the idea and sign off on the charter.

Jon Skeels, the ROSS project team leader in Golden, Colo., says a large percentage of IT projects fail because charters aren't constructed to show stakeholders how the projects will be financed, what the deliverables are and when the milestones would be. He says IT projects without clear buy-in from top-level management founder when conflicts arise because participants have competing visions of success. "A charter signed by all the participants is the best way to keep everybody on board," Skeels says.

Skeels traveled to the nation's 400 dispatch and coordination centers — which handle from 100 to 1,000 daily requests for crews and equipment, primarily by telephone — to gather input about how ROSS should be planned.



PIMM FOX is *Computerworld's* West Coast bureau chief. Contact him at pimm_fox@computerworld.com.



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In one example, Skeels was in Fairbanks, Alaska, and learned there was no common, national order form for crews. As a result, the charter accommodated regional needs.

Currently, the status of emergency resources is broadcast in the morning from the National Interagency Coordination Center in Boise, Idaho. That information is old by the time it's received by dispatchers.

ROSS, slated for a limited rollout this summer, will eliminate the need to manually re-enter orders from dispatch offices. Instead, it will provide real-time ordering capabilities for aircraft, equipment, supplies and firefighting crews, as well as requests for infrared imagery and temporary flight restrictions. Using ROSS, a dispatcher will be able to check location and status of aircraft in an area, rather than having to call around to check availability.

With meager rainfall, hot temperatures and a snowpack at 60% below normal, firefighters need all the help they can get this season.

A signed charter for ROSS was a first step. ▀

JOHN GANTZ

IT Professionals: Happy Today, But Tomorrow?

THREE ITEMS struck me from the story on *Computerworld's* recent Annual Job Satisfaction Survey [Business, July 2]. The first was the low score most IT professionals gave for their opportunities for advancement; the second was the high satisfaction most had with their careers; and the third was the high percentage of IT professionals who said they weren't working to their full potential.



JOHN GANTZ is a senior vice president at IDC in Framingham, Mass. Contact him at jgantz@idc.com.

What do we have here? Happy people with no future?

IT pros are up against a career conflict to which there is no resolution. It's the nature of the work vs. the nature of the job.

In the mid-1980s, my company conducted a study of what gave IT professionals satisfaction in their jobs. We were motivated by an academic research paper we'd seen that ranked "computer professional" as the highest among a slew of occupations when it came to work "actualization," academic-speak for "they liked doing the work itself." Our study, designed

to help IT managers motivate employees, confirmed this: Employees were addicted to the constant puzzle-solving of systems analysis, the poetry of code creation and the thrill of getting new programs to work.

I'm picking up the same vibes from the *Computerworld* survey. People like their work but may not be going where they think they should with it.

More than 15 years have passed since the IDC study, and a lot has changed. IT budgets command about twice the corporate expense stream they once did, business executives understand (all too well, sometimes) IT's value, IT professionals are more attuned to their companies' business problems, and the world is computer-literate. The work of the IT profession has morphed considerably, from the care and feeding of large computers and the writing of custom applications to the deployment of massive enterprise applications based on the work of others.

But a dichotomy still exists. There may be enjoyment in solving the puzzles of IT, but that's less and less of the job. More and more of it involves daily negotiations with peers, suppliers, managers and employees — which sounds more

like how a salesperson would be satisfied than the Cobol programmer of yore would be.

My advice in all this? Forget about your career and focus on the job at hand. A career is only a succession of jobs, anyway. If you like coming to work, like what you do, like the people you work with and are learning *something*, you're on a good path. If you like the work, you'll know what it takes to do it better — meaning that you'll make good choices when you change jobs.

What about getting ready to climb the next rung of the ladder? What skills should you be working on?

That's easy. You'll need people to like you and respect you, which, in my 25 years of work experience, is one of those things that you either have or don't. Other than that, the single most important skill you can pick up is public speaking. You'll need to be comfortable in a group when you're giving a presentation, which is what you need to win project approval, get a budget increase, explain project risks and win those daily negotiations that your job will become. All this beats technical skills.

And, oh yeah, show up on time and stay sober. ▀

READERS' LETTERS

Defending Linux

THOUGH I'M a Linux user and supporter, I have to agree with much of what Bill Laberis wrote in his column "Linux Is Full of Fanatics, Potential" [News Opinion, July 2]. But I have to take exception to his statement that "the biggest obstacles to its broad acceptance... are a lack of open-source standards, multibillion-dollar investments in installed proprietary software and investments in training to use that installed base." The lack of open-source standards was largely overcome with the announcement of the Linux Standards Base (LSB). The investment in installed proprietary software may be a factor for users of mainframes and commercial Unix, but given that Microsoft is forcing the vast majority of its customers to upgrade much of their software every two to three years, many would

be better off in the long term if they switched to Linux. As for the investment in training, the only people who would be seriously harmed by switching would be MCSEs who have no experience with anything other than Windows, and possibly Visual Basic programmers. But most users have to undergo a certain amount of retraining after each upgrade anyway.

J. Allen Crider
Software developer
Huntsville, Ala.

Editor's note: *News of the approval of LSB 1.0 came out the day after the column was published. The LSB is seen by some as an important step toward ensuring that the core Linux code can run across different implementations.*

IT MAY BE true that fewer than 10% of servers ship with Linux today, but that doesn't necessarily reflect the real-world usage patterns. I used to buy servers, ordering them with a single

license for NT Server 4.0, because I couldn't easily obtain a machine *without* an operating system. I then erased the hard drives and installed Linux. It was great. No license management to worry about. No per-seat agreements. And there's something pleasing about seeing this: "3:29PM up 192 days, 18:48."

Adam Delu
University of Texas
Houston Medical School

Give Me Some Slack

I WAS GLAD to see the topic of "Preaching Slack" [Business, July 2] discussed in your magazine. It's always amazed me how a company will push an employee to the point of working overtime and then wonder why the employee isn't doing more. The employee has to be reactive just to stay up with the workload.

Joe Gaydos
WorldCom Inc.
Indianapolis

Where's Rest of Story?

AFTER READING the In Depth report on security [July 9], I feel that *Computerworld* told only half the story. Reporting on all of the methods to shore up security is nice, but what about the people who are creating the security concerns? Who are these people — the crackers, hackers and carders? Profiling them will provide the necessary solutions to the problems facing Internet crime.

Dan Clements
CardCops.com
Malibu, Calif.

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, *Computerworld*, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 879-4843. Internet: letters@computerworld.com. Include an address and phone number for immediate verification.

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MARKET FACT

"The scalability benefits offered by Application Center make it possible to integrate a distributed Windows platform. Application Center gives us one endpoint as a single point of contact for our customers. It's a 2000-based Web server farm." —Mike Bodnar, Production Services Manager, TeleType

like cluster management and application deployment. Plus, it makes it easy to achieve capacity on demand through automatic replication of applications when you add servers or make changes to existing applications. But simplicity is not all you get:

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DON TAPSCOTT

Be Prepared for The 'Hypernet'

HITACHI'S remarkable new Mew chip is just another example that we're "on the second half of the chessboard" — a phrase coined by the brilliant inventor and author Ray Kurzweil to describe the pace of today's technological advances.

The chip measures less than half a millimeter per side and includes 128 bits of read-only memory



DON TAPSCOTT is president of New Paradigm Learning Corp. and co-author of *Digital Capital: Harnessing the Power of Business Webs* (Harvard Business School Press, 2000). Contact him at: dtapscott@digital4sight.com.

and radio-frequency wireless circuitry that can transmit up to a foot away. One of myriad possible uses for the tiny chip (many of which are chilling from a privacy perspective) is to weave it into paper money, which would allow authorities to track the movement of cash and immediately detect counterfeit bills. Mew illustrates why the turmoil unleashed by the Internet in the past five years pales in comparison with what will happen in the next five. Mobile

computing devices, broadband access, wireless networks and computing power embedded in everything from bicycles to factory tools are converging into a vast global network — a Hypernet — that will fuel exponential change in business-model innovation. The Hypernet is to the Internet what the Internet was to early proprietary computer networks.

Kurzweil's chessboard analogy harkens back to a story of a Chinese emperor being so delighted by the game of chess that he offered the game's inventor anything he wanted in the kingdom. The inventor replied that he wanted only rice.

"I would like one grain of rice on the first square of the chessboard, two grains on the second square, four grains on the third square," and so on. Thinking this would amount to little, the emperor readily agreed.

But fulfilling the inventor's request is impossible. If you were to double the grains of rice with each square, the final square would require more than 9 quintillion (a 9 followed by 18 zeroes) grains of rice — enough to blanket the world. While the amounts of rice are minuscule at first, they become substantial — more than 2 billion grains — once you're halfway across the chessboard. Kurzweil originally made his comparison to computers in the early 1990s, noting that

processor power had already doubled 32 times since the first computers in the early 1940s.

We're now on the second half of the board. The gains achieved in digital technologies grow more astounding by the week. And for many technologies, there's no end to the gains in sight.

Transistors will continue to shrink, processor power will continue to double and redouble, chips will be embedded into every object, Internet bandwidth will continue to expand, and human beings will create more Web-based solutions for everyday problems.

Tomorrow's Hypernet will comprise a billion Net-connected mobile phones and billions of networked game-consoles, handhelds, toys and information appliances. Devices are already proliferating and morphing into a bewildering variety and approaching throwaway prices. Computing is becoming so ubiquitous that it's receding into the background. In the age of the Hypernet, business-model innovation will be essential to capture the value created by new kinds of transactions and new ways of managing existing transactions. The pace of innovation will accelerate, and obsolete enterprises will be quickly eclipsed. ▀

WILLIAM M. ULRICH

Keep It Simple: Try Integrated Tools

IT'S AN AGE-OLD question: Should IT acquire an integrated set of software management, maintenance and development tools, or should it license a series of point tools, each with niche functionality? The vendor community offers you a choice. But what's the best option? In general, an integrated tool suite offers advantages over a collection of niche products.

As IT seeks to automate software specification, development, enhancement and management activities, the number of software products fulfilling these requirements is growing. For example, tools that help analysts and developers build and deploy applications are rapidly evolving. Many niche tools, which individually provide Universal Markup Language (UML) visual object modeling, source-code editing and debugging functions, have been bundled into integrated development environments (IDE).



WILLIAM M. ULRICH is a management consultant and president of Tactical Strategy Group Inc. Contact him through www.systemtransformation.com.

Integrated product suites extend well beyond IDE. Software tools can also help IT managers and developers track project progress, coordinate companywide personnel use and account for the many documents that are byproducts of these projects.

Additional products help maintain and enhance the IT knowledge base by capturing and cataloging user requests, requirements and documentation in a knowledge repository. White-board tools allow business and IT analysts to exchange ideas via virtual meetings. These collaboration tools allow IT to streamline ongoing communications with users and customers to expedite projects and meet critical business requirements.

But why should IT care if these products are delivered as stand-alone tools or as part of an integrated suite? Because the tasks performed and the deliverables produced by these tools are related. To effectively leverage the capabilities of individual tools, the information these tools produce needs to be leveraged by related tools. For example, a UML model produced by one tool might be used by an IDE to generate a Java application.

The level of tool integration offered by software vendors varies. They can bundle internal or third-party tools under a product suite, or deliver a framework with integration interfaces to third-party tools.

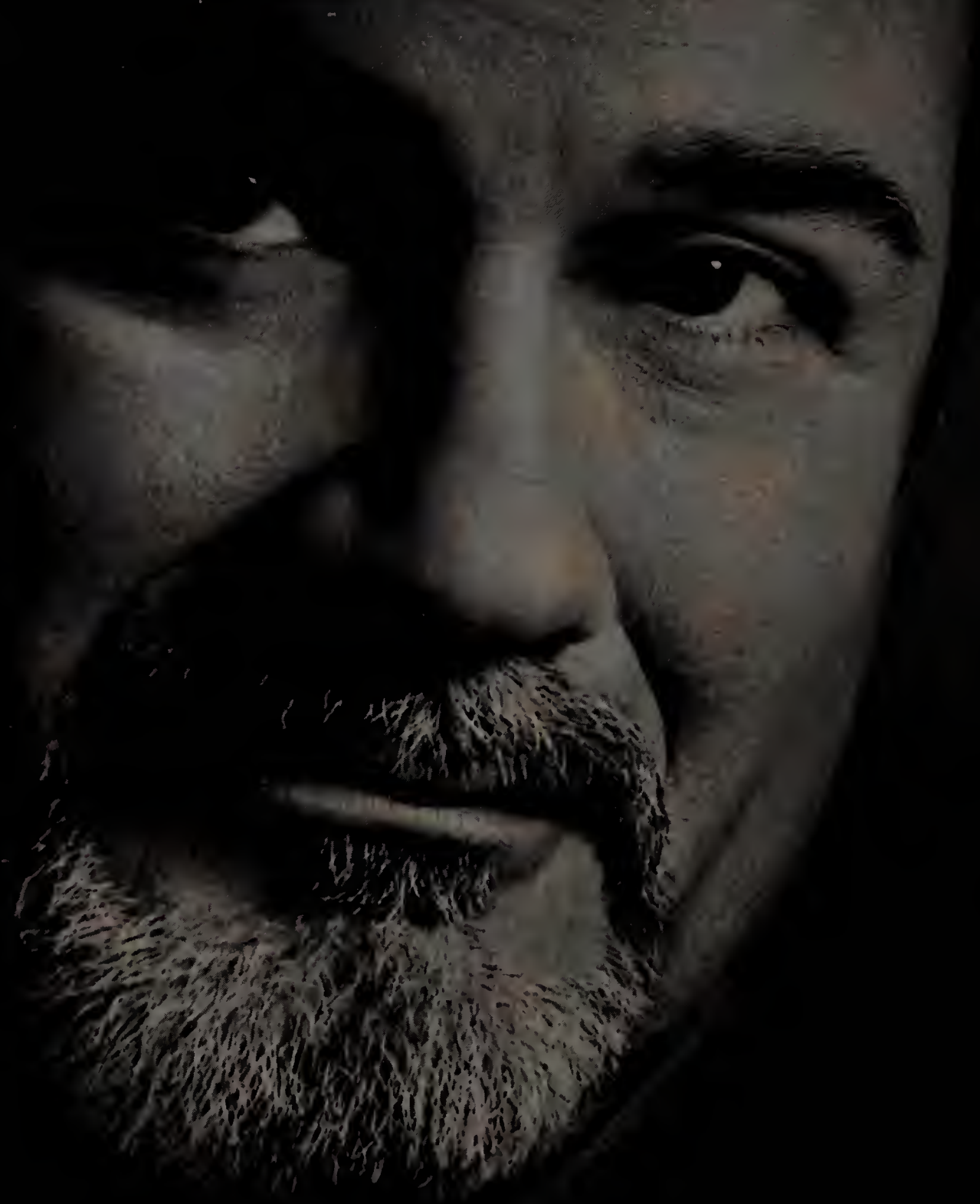
The ideal is an integrated product suite, with a rich set of functional tools that can integrate with third-party products. This approach provides a product framework, delivers baseline functionality and accommodates other tools already in use. Integrated product suites also reduce the number of vendors you need to deal with and allow you to train people on just one product, simplifying the product acceptance and deployment process.

Ideally, a vendor offering a software product suite meets the following criteria: The product should provide a framework with a Web-enabled interface, it should have a rich set of integrated, functional tools created by the vendor and acquired or licensed for bundling into the product suite. Such a product should have an open repository that facilitates the exchange of information from one tool to another while offering an open interface to other third-party products.

For example, a collaborative work environment might include tools for project management, resource tracking, analysis and design and document management, as well as other tools to simplify enterprise project tracking and deployment. This product should also be able to move information between stand-alone tools. This provides IT with an integrated product suite that accommodates niche products already in use.

Consider these fundamental requirements when looking at your next product acquisition. Selecting an integrated suite that accommodates third-party products will simplify the acquisition, deployment and management of your software tool environment. ▀

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suppliers that they don't even
know themselves.**

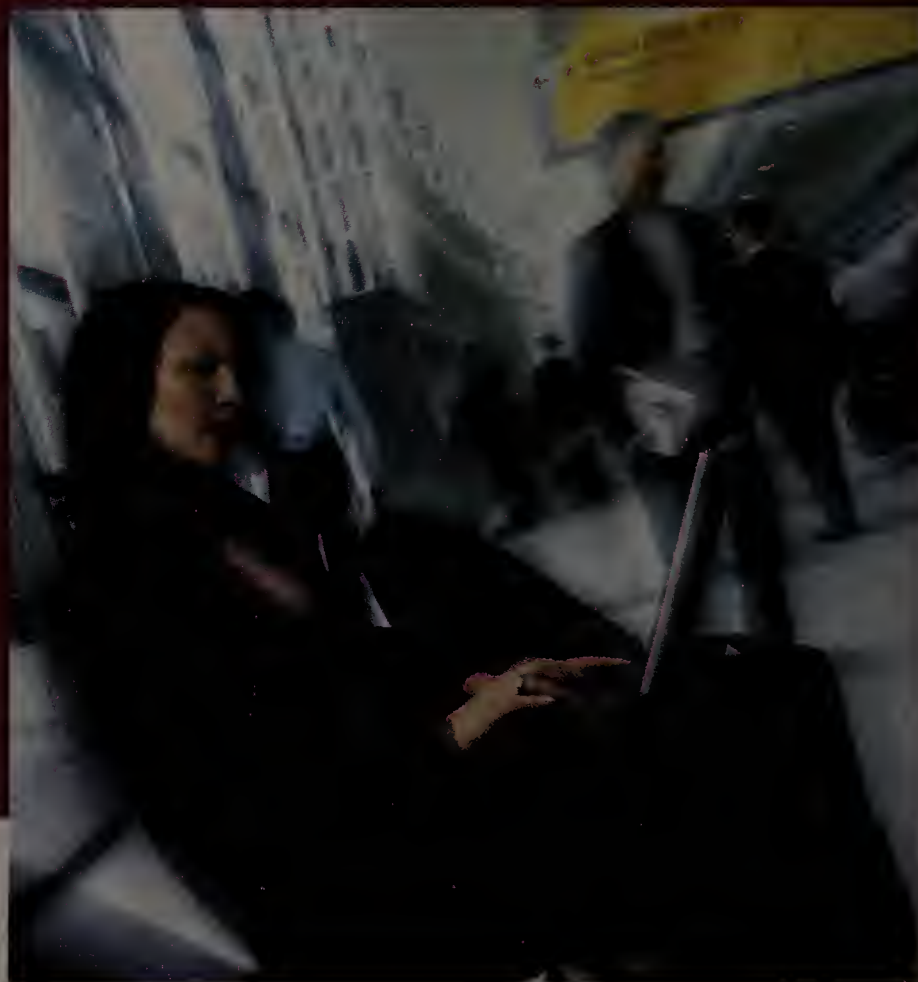


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BUSINESS

E-GROCER WOES

After several last-ditch efforts to stay afloat, Webvan is finally throwing in the towel. Now, as its competitors struggle through the industry's rough waters, one question remains: Just how viable is the online grocery business? **▶ 38**

IT ON GUARD

It's amazing how few companies take IT security seriously enough to prepare for attacks, writes Kevin Fogarty. In the e-commerce world, you need to be vigilant — not gutsy — in your efforts, long before trouble starts. **▶ 38**

SEAMLESS SYNCHRONICITY

"Silos exist for a reason," says author Mohanbir Sawhney, who discusses an article he wrote for the current issue of the *Harvard Business Review*. A focus on presenting a unified corporate face may result in lost specialization on the back end, he warns. **▶ 39**

RISKY BUSINESS

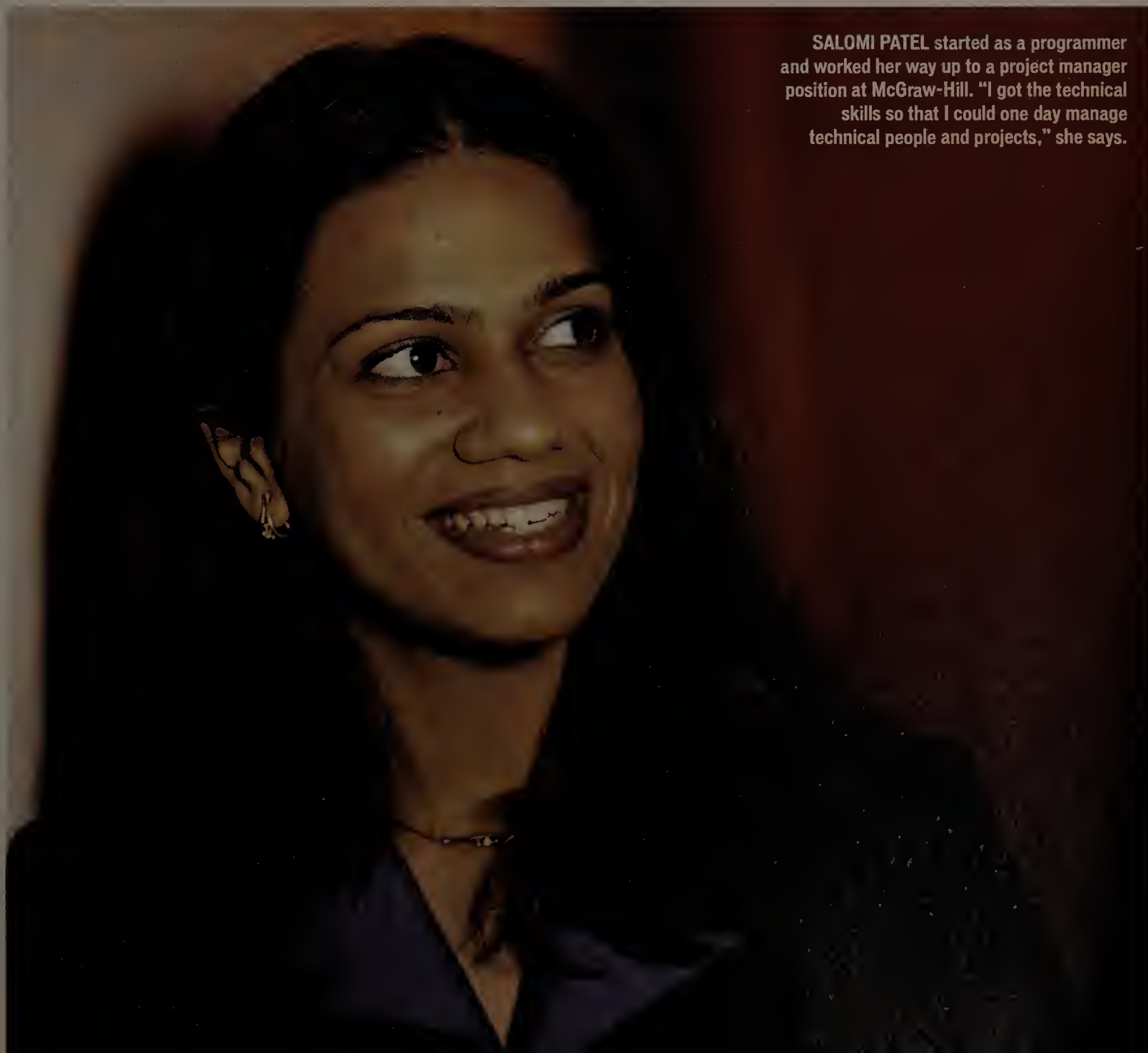
In most corporations, taking risks is . . . well, too risky. But at Sun Labs, "if you aren't failing often enough, you aren't taking enough risks," says James Gosling, vice president and fellow at the company and the creator of the original Java programming language. **▶ 40**

MAKING THE LEAP TO LEADER

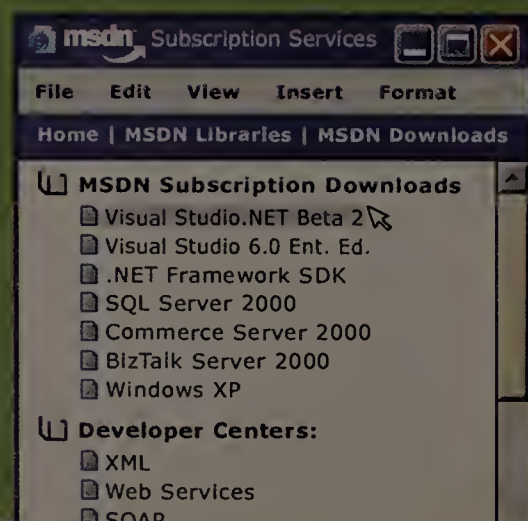
WANT TO BE A PROJECT MANAGER? Well, join the club. It's a logical step for people with technical know-how and an eye on a career in management. But getting there can be a challenge. Find out how two project leaders made their moves.

42

SALOMI PATEL started as a programmer and worked her way up to a project manager position at McGraw-Hill. "I got the technical skills so that I could one day manage technical people and projects," she says.



A bloated phrase such as “revolutionary



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paradigm shift” often appears here.

Online Grocer Webvan Crashes With a Thud

Business closes amid continuing losses

BY TODD R. WEISS

After trying unsuccessfully for the past two years to make a business out of selling groceries online, Webvan Group Inc. last week closed its doors for good.

The Foster City, Calif.-based company announced that it's ending all operations, laying off about 2,000 workers and preparing to file for Chapter 11 bankruptcy protection. Webvan said it has no plans to reopen and will instead look to sell off its assets.

Robert Swan, the company's CEO, said in a statement that the closing was necessitated by continuing losses, a situation that was made more difficult by a steep drop-off in orders during the second quarter.

Webvan had "weathered nu-

merous challenges" and might have been able to survive if the economy and the venture financing climate were in better shape, Swan said.

"At the end of the day, however, the clock has run out on us," he said.

Webvan, which was founded in 1997, was operating most recently in Chicago; Los Angeles; Orange County, Calif.; Portland, Ore.; San Diego; San Francisco; and Seattle.

The company had also offered groceries via the Internet in the Dallas/Fort Worth area, but it closed that operation in February and laid off the 220 workers there in a bid to conserve capital and focus on profitability in its other markets. Webvan later discontinued service to customers in Atlanta and cut 885 more jobs as part of another reorganization that was announced in April.

Swan, who had been Webvan's chief operating officer,

replaced George Shaheen as the company's CEO at the same time. Along with the restructuring moves, Webvan reported a first-quarter net loss of \$86.1 million on revenue of \$77.2 million and said it had about \$115 million in cash on hand. However, the company didn't expect to become profitable until the second half of next year.

In September, Webvan bought rival HomeGrocer.com Inc. in Kirkland, Wash., for \$1.2 billion in stock.

Amy Nobile, a spokeswoman for Webvan said the

company's strategy may have hurt it in the end.

"Certainly, in hindsight, no one knew what was going to happen in the marketplace," Nobile said. "No one realized the amount of education it would take to get customers to change their buying habits" and shop online for groceries.

Webvan had plenty of company as a struggling online grocer. Skokie, Ill.-based rival Peapod Inc. had to turn to Netherlands-based majority owner Royal Ahold NV for a \$50 million credit line earlier this year and then quickly closed its San Francisco operations, redirecting its former customers in San Francisco to Webvan.

And last month, Pleasanton, Calif.-based grocery store chain Safeway Inc. temporarily suspended its GroceryWorks.com site while receiving Web site design help and new funding from U.K.-based counterpart Tesco PLC. (See related story on next page.)

Gene Alvarez, an analyst at Meta Group Inc. in Stamford, Conn., said the lack of such a business connection was a big contributor to Webvan's failure.

Webvan "took a substantial risk" in its strategy of rapid expansion in many markets across the nation, according to Whit Andrews, an analyst at Stamford, Conn.-based Gartner Inc. ▀

Goodbye, Grocer: The Rise and Fall of Webvan

1997	1999	September 2000	February 2001	April 2001	July 2001
Webvan founded	IPO	Acquires HomeGrocer.com	Closes Dallas/Fort Worth operations	Closes Atlanta operations	Announces complete shutdown

KEVIN FOGARTY/BRICKS AND CLICKS

Better Part of Valor?

THE THING I'VE ALWAYS admired about some business folk is their ability to make a decision and stick to it without taking into account the personal consequences.

"I can make decisions very quickly," one high-tech executive told me eight or nine years ago. "I

don't require too much information to do it, either. I make the decision, and if it's wrong, I see that and I'm ready to change it."

I always thought that was pretty gutsy — damn the torpedoes, full speed ahead!

Of course, when Adm. Farragut actually damned the torpedoes, it was only 1864, and it was easy to balance the potential risk of floating faulty gunpowder bombs against the reward of

a major Union victory in Mobile Bay.

We're way ahead of that now. In the e-commerce world, we're at more of a World War II level of threat. Damn the torpedoes, and they'll take you to the bottom.

That's why it's still surprising that security still gets taken so lightly in the U.S. The FBI reports that 85% of corporations surveyed have some kind of security breach every year.

Those break-ins help the few security maniacs in every IT organization fuel a panic, but the panic always subsides before serious budget and planning decisions are made.

For example, Datamonitor estimates that major companies still spend less than 5% of their total IT budgets on security. Now that's gutsy.

Of course, the FBI also says actual losses due to fraud and direct theft will be only about \$380 million this year. So paying for the losses must often be cheaper than

paying for the security to prevent them.

But that ignores the soft cost of the time security people spend applying patches, monitoring intrusion-detection systems and fixing servers or sites that get nailed.

It also ignores the increasing importance of e-commerce — whether that means consumer Web sites, automated supply chain connections to suppliers, or any other online connection to customers and business part-

ners. As you move forward with any form of online business, you become more exposed, both to routine hackers and the more serious corporate spies and saboteurs whose actions generally go undiscovered or unreported.

Security measures that may have been extraneous before aren't anymore. The risks you face have changed, and you can't stop them by just throwing money at products or services that claim they'll make you secure.

You have to think about what you want to protect, concentrate your resources there and then hide those assets and the defenses you've built around them. You must remain vigilant, even when nothing's happening.

You have to know how to defend against an attack and collect evidence, and be willing to go public and prosecute in court.

We're no longer in the experimental era of online crime. The bad guys are serious and skilled, and gutsy decisions will only leave you vulnerable. Precautions pay off, especially if you want to damn the torpedoes, and not the other way around. ▀



KEVIN FOGARTY is Computerworld's features editor. Contact him at kevin_fogarty@computerworld.com.

Learning to Synchronize Your Organization the Right Way

In their rush to present a unified corporate face to the customer, some companies may be taking the wrong approach, says **Mohanbir Sawhney**, the McCormick Tribune professor of e-commerce and technology at Northwestern University's Kellogg Graduate School of

Management in Evanston, Ill. In a recent interview with *Computerworld's* Kathleen Melymuka, Sawhney talked about an article he wrote for the current issue of *Harvard Business Re-*

view in which he proposed a better way to "hot-sync" your organization.

Q: How does the metaphor of the PalmPilot's Hot Sync button apply to the structure of corporate IT departments?

A: The power of the Hot Sync button is that you can have seamless synchronicity between data in one place and data in another place. Metaphorically, it's the idea of information that is available in one part of the organization becoming seamlessly and instantly available to every part of the organization.

Q: How does the lack of that corporate hot sync obstruct the customer relationship?

A: It fractures the view the customer gets of the organization and the view the organization has of the customer, particularly in a multidivisional, multi-product, multigeographical company like HP, 3M, General Motors or Ford.

For example, a Ford customer could be driving a Taurus; his other car is a Volvo. Both are financed through Ford Credit, and he rents cars through Hertz. But Ford may not know this. They can't determine the value of the customer relationship, and they can't cross-sell or up-sell to leverage that value.

From the customer's standpoint, the company's left hand

doesn't know what its right hand is doing.

Q: How can you synchronize a company?

A: Resist the temptation to solve this with a blunt instrument by unifying all corporate information into one giant database and totally standardizing and homogenizing practices.

Silos exist for a reason. You need them for functional and product excellence. If you become focused totally on presenting

one face to the customer and meld it all together, you start to lose that specialization at the back end that allows you to compete effectively in the long run.

Q: What's the alternative?

A: You can have your cake and eat it too. Through a combination of redesigning the IT infrastructure, the customer interface and the organization, you can get the benefits of presenting one face to the customer while still preserving product organizations in the back end of the company so you still have functional excellence and product excellence. You don't have to destroy silos; you can create virtual seamlessness.

Q: How does this affect your IT infrastructure?

A: In the traditional, vertically integrated IT infrastructure, the applications are stovepipes from the front end to the back end, and it becomes very difficult to deploy new technology or reconfigure technology based on customer problems. The fundamental shift is from a vertical to a tiered architecture, with the introduction of middleware that allows you to decouple the back end from the front-end customer interface.

Q: What's the hardest part of getting synchronized, in terms of IT?

A: The big challenge is to be able to drive standards for the

back-end infrastructure across a complex, multidivisional organization. At [American International Group Inc.], for example, there were 600 people operating 220 Web sites in 120 countries using 80 languages.

How do you drive standardization of that back-end infrastructure? But you need to get all of them to buy in, because you are creating more of a centralized organization at the infrastructure end, which



SAWHNEY: "You can create virtual seamlessness."

allows you to decentralize at the customer interface. That's the paradox.

Q: Are there any companies that hot-sync today?

A: A number of companies — HP, 3M, Motorola — are in various stages of this

transition. I don't mean to give the impression that this is easy. It requires tens of millions [of dollars] in investment and strong commitment by leadership.

Safeway Turns to British Counterpart for Online Help

Chain trying to invigorate Web site

BY TODD R. WEISS

U.S. grocery store chain Safeway Inc. is attempting to breathe new life into its GroceryWorks.com online shopping affiliate by seeking new funding plus Web site design assistance and other IT-related help from British counterpart Tesco PLC.

Pleasanton, Calif.-based Safeway last month temporarily suspended operations at its GroceryWorks.com site so it could try to learn how London-based Tesco built its online grocery business into a commercial success in the U.K. Safeway said it wants to take those lessons and revitalize Dallas-based GroceryWorks, which it teamed up with and invested in early last year.

Safeway spokeswoman Debra Lambert said a key lesson that the \$32 billion company has already learned from Tesco is that an online grocer has to combine brick-and-mortar stores with a Web site and avoid costly warehouses in

order to be successful.

"We feel the best approach is online and brick-and-mortar, not pure-plays," she said.

The online unit, which currently operates only in Texas, will start filling orders from local Safeway stores instead of from warehouses when it reopens, matching the approach used by Tesco. A restart date hasn't been set.

Russell Craig, a Tesco.com spokesman, said filling online orders directly out of a local store instead of from a warehouse results in faster service for customers and reduced costs for the company.

Tesco has approximately 1 million registered online shoppers who place orders averaging \$133 every week or two, he noted.

The alliance with Tesco is meant to provide GroceryWorks with help in all aspects of the online grocery business, from designing the Web site to setting up the system needed

Q: What do you have to watch out for?

A: This is like a three-legged stool: You have to have all three legs, or you fall. If you redesign your offerings to present a single face to the customer and put up one Web site, unless your back end is unified, you really can't deliver because different parts of the organization don't talk to each other.

If you build a decoupled infrastructure but don't redo how you go to market, you're not going to be able to leverage the technology investment. If you do both but don't change the way the organization works, the salespeople won't buy in. It's a systemic process. ▀

to run a store-based shopping service, Lambert said. Tesco's online experience will be combined with the procurement power and market presence of Safeway's 1,500 U.S. stores, she added.

As part of the deal, Tesco will also invest \$22 million in GroceryWorks and provide intellectual property and technical resources in return for 35% of the online venture's voting stock. Tesco's investment is part of a total cash infusion of \$35 million that GroceryWorks is receiving, the companies said.

Safeway owns about 50% of the voting equity in GroceryWorks, and the remaining 15% is held by other shareholders.

In a related matter, Safeway said it plans to record an "impairment charge" of about \$30 million in the second quarter, in connection with its investment in GroceryWorks.

Gene Alvarez, an analyst at Meta Group Inc. in Stamford, Conn., said the agreement with Tesco should be good news for both Safeway and GroceryWorks.

"Tesco does bring a wealth of online grocery experience," Alvarez said. ▀

JUST THE FACTS

Rescue By Tesco

Tesco will provide Safeway with:

- Web site design assistance
- IT and e-commerce consulting
- \$22 million in capital

WORKSTYLES

At Sun Labs, if You're Not Failing, You're Not Doing Your Job

Interviewee: James Gosling, vice president and fellow; he crafted the original design of the Java programming language 10 years ago.

Company: Sun Microsystems Laboratories

Main location: Palo Alto, Calif.

What's it like to work at Sun Labs? "For the last year, I've been in the research lab. It's pretty entertaining. The goal of any research lab is to do things that are kind of weird and outlandish and risky. In most IT organizations, the big goal is to succeed, which means, 'Don't take risks.' But in a research lab, if you aren't failing often enough, you aren't taking enough risks."

Dress code: "Casual. I typically wear T-shirts and blue-jeans and Birkenstocks."

Annual reviews: "Technically, I'm supposed to get one, but I haven't had one in so long. I don't know what they look like."

Bonus program: "Yes. But [I] don't know about this year."

Food perks: "We get coffee and tea and that kind of stuff. We turned off the free sodas. Look at the stock market. Like every other company, we've been doing everything we can to be cost-conscious. And so a number of the things we used to do all the time... have kind of gone away."

What type of office do you work in? "Sheetrock. Four walls."

What do you keep on your desk? "All kinds of bits of paper, a pile of assorted toys, but mostly it's a monitor and a keyboard."

When are you under pressure to get things out? "The research lab typically doesn't do product releases, so we don't typically have the same types of scrambles as other parts of the company. The research lab tends to be more mellow. But

for anyone involved in JavaOne, it's a pretty much over-the-top scramble time."

Is Sun using new development techniques such as Extreme Programming (XP, which pairs two programmers to work side by side) or lightweight coding methods (where programs are kept to their simplest functional parts)?

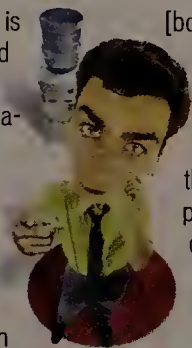
A: "We use some parts of [both]. XP has a real focus on testing, and we certainly have that religion big-time... The pair-programming thing, I don't know that people [at Sun] would do it. For most of the people I know, it gives them the creeps. **Must people carry beepers? Cell phones?** "An awful lot do, but less now. I used to carry a

pager, but I don't carry a pager anymore. It's kind of a wardrobe thing... I don't wear a jacket that I could put it in, and I don't have a briefcase to put anything in.

"Whatever I carry, it has to fit into the pocket into my blue-jeans. If I had a Palm Pilot or a BlackBerry, experience says that within a week, it's either lost or destroyed. There is nothing like putting a Palm Pilot in your pocket and sitting on it. But that said, I have a budget for one thing: a cell phone that works as a pager."

Would you feel comfortable e-mailing the CEO of Sun, Scott McNealy? "Oh yeah... John Gage [chief researcher and director of Sun's Science Office] came up with this great quote to describe how Sun works, which is, 'Sun doesn't have an org chart; it has e-mail.' Scott gets e-mail from people all the way up and down the chain - everywhere. And often, it's the primal screams from people down in the trenches that get the most action."

- Lee Copeland



What It's Like To Work at...

PETER G.W. KEEN

Integrate for Wireless

INFORMATION TECHNOLOGY follows a consistent pattern: Each breakthrough in technology brings new functionality first and integration costs later. The breakthroughs create new users and uses, stimulate innovation and make IT an increasingly powerful business and organizational resource. But every surge of new applications is followed by a decade of trying

to fit the IT pieces together. The result is more and more middleware, never-ending investments in enterprise application integration, a burden of legacy systems and related costs of dealing with incompatible systems.

Innovations such as minicomputers and office automation systems in the 1970s, PCs and LANs in the 1980s, Web sites in the 1990s and wireless tools today began as new capabilities that were independent of the established IT enterprise resource. As long as these tools remained personal, local and limited to just a few applications, everyone benefited. But that changed when users of the "personal" computer needed access to enterprise data, when "local-area" networks needed to connect to wide-area networks and when Web "sites" had to link to legacy systems. IT then had to move from the sidelines to the center, often in a defensive mode, to fix problems of systems disintegration at a great expense and with no apparent benefit to many users who were personally satisfied with the tools and saw no value in "standard" architectures.

Mobile-commerce will compound the problem. PDAs such as the PalmPilot, Web-enabled phones, wireless laptops and BlackBerry devices are repeating what happened with the PC, except in far larger numbers. The functionality that, say, Palms with wireless communication links offer to sales reps in the field is immense, and there's no reason to discourage their use. Synchronizing those Palms with users' desktop data adds even more personal functionality, but opens up all the old PC problems: virus protection, security, directory management, operating system incompatibilities, proprietary applications and even ownership. Often, the Palm is bought by the individual and isn't part of the enterprise IT inventory. It's literally "personal" and, to its owner, none of IT's business.

Wireless is the future of IT, and much of the future is now. Even with today's limitations of wireless speed, quality of service and reliability, m-commerce applications are everywhere. In researching our soon-to-be-released book, *The Freedom Economy: Gaining the M-Commerce Edge in the Era of the Wireless Internet*, co-author Ron Mackintosh and I found hundreds of examples in sales force automation, customer service, emergency police and fire services, education, health care, warehouse management, shipping and many other uses. By the end of next year, wireless will be the mainstream of IT use. For example, just about every mobile phone will have Web capabilities and every laptop will come with a wireless option.

How does IT help the enterprise leverage all this innovation and, instead of repeating the historical pattern of functionality vs. integration, gain the architecture advantage of functionality *plus* integration? Going on and on about architecture and standards won't help; it largely hasn't done so to date. And any IT effort to regulate PDA and mobile phone usage is, at best, a quixotic ambition. The most promising

way of getting across the message of integration without talking about it in terms of architecture and standards comes from Mackintosh's firm, Differentis: the concept of the joined-up business (JUB).

This is the long-term target for every element of process design, customer relationships, logistics and supply chain, organizational coordination and knowledge management. If the JUB is the goal, then we can shift the IT argument from where functionality *precedes* integration to where functionality *must come with* integration. If IT doesn't get that business point across now, then wireless will be an enterprise burden, no matter how much local and personal value it provides.

Get the message out fast! ▀



PETER G.W. KEEN
(peter@peterkeen.com) is chairman of Keen Innovations (formerly The International Center for Information Technologies) in Fairfax Station, Va.; a senior fellow of Differentis, a European business-to-business consultancy; and a distinguished visiting professor at the University of Delft in the Netherlands.

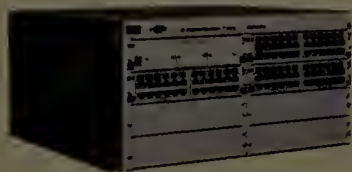
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THINK YOU'VE GOT WHAT it takes to be a successful project manager? Apparently so does about half the IT world.

Granted, technical recruiters and industry associations say the demand for project managers is surging. But so is interest in the position. The Project Management Institute Inc. in Newtown Square, Pa., reports that there are currently 27,000 certified project management professionals in 26 countries.

It really should come as no surprise. The job of project manager is a natural steppingstone for people with technical experience and an eye on a management career. And at most companies, the pay isn't too shabby. Project managers can earn approximately \$100,000 a year, on average, and more, depending on the scope and length of their experience.

How do you really know if you have what it takes to be a project manager? And how can you persuade your boss to give you a shot at the job? Consider the examples of how the following two project managers made their move.

Salomi Patel
Project manager
The McGraw-Hill Cos.
Hightstown, N.J.

When Salomi Patel joined New York-based McGraw-Hill in May last year as a programmer, she already had several years of work experience and an undergraduate degree in computer science. Because her goal was to move

into management, Patel enrolled in the part-time MBA program with a concentration in MIS and e-commerce at nearby Rutgers University.

"I told my boss that I didn't want to be a programmer for a long time — I wanted to be a project manager," says Patel. "I got the technical skills so that I could one day manage technical people and projects."

Within six months, her wish was granted. Patel's boss, Corri Russell, a manager at McGraw-Hill's Construction Information Group, was planning to take maternity leave and needed someone to take on project management duties while she was out of the office.

The group was rewriting an application that collects information for the Construction Group and puts it up on the Web. Russell asked Patel to lead the project.

"Salomi has all the qualities you would look for in a project manager," explains Russell. "She has a technical background, shows a lot of initiative

and is quick to learn. As a programmer, she had taken on a leadership role in her project — even before expressing her interest in becoming a project manager."

Patel says her graduate work has been helpful in preparing her to meet the demands of the project manager's role. But the day-to-day experience of doing the job is what has sharpened her skills.

"When I was a programmer, I tried to think like a project manager," Patel says. "I didn't only focus on the module I was coding — I tried to learn about the entire project from a business point of view."

Once she was promoted to project manager, Patel discovered unexpected challenges.

"I had to learn how to communicate with team members," she says. "If they were not performing up to expectations, I realized that I couldn't be blunt. I had to find a better way to give them the message. It was hard in the beginning, but I learned how to be po-

Project managers are in high demand. But IT pros know it, and the competition is getting stronger. Here's a look at the skills and qualities that will help you get an edge. By Jill Vitiello

Fast Track Into Management

lite and demanding at the same time.”

At Russell's suggestion, Patel attended a McGraw-Hill workshop called “Managing Projects for Success.” In the three-day course, she says, she “learned about the project life cycle and how projects should be executed at McGraw-Hill.” The training provided company-specific templates and processes and gave Patel the chance to “build a network of project managers from other departments,” she says.

Patel found the experience so helpful, she returned for more company-sponsored training for project managers in business writing. In the fall, she plans to take the McGraw-Hill workshop on business communication.

With her skills as a project manager, and an MBA with a concentration in MIS, Patel is aiming for a career in technical management.

“Things are working out the way I hoped they would,” she says. “Eventu-

ally, I want to take on more senior level management positions within [IT].”

Bill Matasker
Project manager
Verizon Network Integration
Edison, N.J.

In his work as a network engineer at Verizon Communications, Bill Matasker gradually began to take on project management responsibilities because there weren't enough project managers to handle the workload. Verizon had just launched a massive project called Access New Jersey, in which the company provides free telecommunications equipment to connect the state's public schools and libraries to the Internet.

Matasker says he found that he enjoyed “seeing a project go from a piece of paper to a working network.” When a project manager slot opened up, he offered to fill it and got the job.

“The director of operations knew my technical background and had seen the work I'd done on some of the complex accounts,” says Matasker. “He thought I would be a good fit.”

Matasker started by managing smaller projects for approximately the first month.

“That's the ideal way to start as a project manager,” says Matasker. “You can get your feet wet without the responsibility of a million-dollar account. But that period doesn't last long. When the job load increases, then it's a baptism by fire.”

Matasker has remained relatively unscorched in his two years as a project manager, even while simultaneously overseeing dozens of projects valued in the millions of dollars. He says he did it “with some luck, but mostly dealing with the inevitable unforeseen problems as soon as they arise and keeping in mind that the resolutions should always be win-win for the customer and for your own company.” Along the way, Matasker says, he's picked up some other “fire-protection” pointers.

“Never lie about the project status,” he advises. “There is no reason to lie. Time runs out. Resources change. If you are doing everything you can to the best of your ability, there is nothing more you can do. The customer may get upset over the truth, but if you lie, you're screwed.”

Matasker says he also believes that successful project managers must approach each team member with an understanding of that individual's unique situation. “You have to understand where each person is coming from and what he or she hopes to get out of being involved in the project,” he says.

“A lot of project management is common sense — communication and organization skills you acquire just by living and learning from your mistakes,” says Matasker.

The ability to listen is one of the most important skills a project manager can have, he adds. And it's one of the hardest skills to master.

According to Matasker, one of the most rewarding aspects of being a project manager is gaining the confidence of colleagues and higher-ups.

“When you hear through the grapevine that people believe a project will run smoothly because you are the [project manager] on the job, it gives you a great feeling of satisfaction,” says Matasker. ▀

Vitiello is a freelance writer in East Brunswick, N.J.

Project Management Skills Checklist

If you think all there is to project management is writing a to-do list on a napkin at the lunch table, you're about two decades behind the times.

So says Paul J. Rutkowski, project management professional, senior manager and project/program management curriculum specialist at Lucent Technologies Inc.'s Corporate Learning & Performance Center in Naperville, Ill., and a director-at-large at the Project Management Institute.

“Today, projects are much more global and complex,” Rutkowski says. “Customers are demanding speed to market because a project's timing affects business operations. They require flawless execution to realize business opportunities. Effective project management is the way to make it happen.”

Rutkowski says the project manager has an “awesome role.” Some of the skills project managers need to succeed include the following:

- **Leadership:** the ability to create a vision and inspire a team to achieve project goals successfully.
- **Communication:** with the project team, customers, project sponsors, vendors and others. Rutkowski estimates that more than 80% of the project manager's time is spent using this skill.
- **Conflict resolution:** making sure that nobody feels ostracized or less a part of the team, no matter what the final decision.
- **Negotiation:** understanding how to leverage vendor partnerships and build relationships with people whom the project affects.
- **Team building:** once the project team is assembled, team members need to understand their roles and responsibilities to work together effectively.
- **Listening skills:** not having a predisposed notion, but truly listening to team members, customers and managers.
- **Relationship management:** among various constituents at all levels of the organizations involved.

— Jill Vitiello

SALOMI PATEL says she sharpened her project management skills at McGraw-Hill with day-to-day experience.



STUDIO PALSANO

Price-to-Earnings Ratio

DEFINITION

The price of a stock, divided by its earnings per share. **P/E** is a common way to gauge the value of a company.

BY MARY K. PRATT

GRAHAM AND Dodd's investment bible, *Security Analysis*, stressed the importance of the price-to-earnings (P/E) ratio when it was first published in 1934. The book called P/E "a concept that the working analyst will have to deal with extensively."

At first glance, the ratio seems relatively simple: The price of a stock, divided by its earnings per common share.

But P/E is more complicated than that. How it's calculated can vary, and the weight it's given can also change. And not long ago, some market gurus even questioned its merit in determining a company's value in the New Economy.

But the dot-com bust has since brought P/E back to the forefront, and experts say the calculation still serves as a crucial tool for smart investing.

"This ratio has been around for decades. It's always been important," says Ray Martin, president of CitiStreet Advisors LLP in Quincy, Mass. "But with the fallout of the dot-com stocks that had no earnings, they're placing as much emphasis as they ever had on P/E ratios."

Calculating P/E ratios is straightforward. If a company's stock sells for \$10 with \$5 earnings per common share, the P/E ratio is 2. There's a hitch, though: Not everyone uses the same definition of *earnings*.

"It's profits, but it's not so easy to define profits," says Robert J. Shiller, an economics professor at Yale University in New Haven, Conn., and the author of *Irrational Exuberance* (Princeton University Press, 2000). "Accountants have been debating that for 100 years."

Analysts sometimes apply earnings from the previous year or next year's estimated earnings to calculate a P/E ratio. They might use the last quarter's earnings multiplied by four, or apply earnings that are calculated before interest, taxes, depreciation or amortization.

The most traditional approach is to use trailing 12-month earnings, as reported by companies.

"We just found that trailing four-quarter earnings is more reliable," says Kari Bayer, a

quantitative strategist at Merrill Lynch & Co. in New York.

Still, not everyone favors using past earnings, says Kei Kian-poor, CEO of New York-based Investars.com, which provides peer-group analysis tools for the investment community. "Looking at historical earnings and taking that P/E, you would have a safer bet," he says.

But what if that company doesn't expect any earnings in the upcoming year? "I think estimated future earnings are much better, but you need excellent projections," he adds.

Obviously, past earnings can't be applied to start-ups, either.

"The price-to-earnings ratio wasn't even calculable [for new companies], because they didn't have any earnings," says Richard DeKaser, chief economist at National City Corp. in Cleveland.

Nevertheless, knowing a company's P/E ratio doesn't necessarily mean much. A more important gauge of a company's financial health is "how does it compare to stocks in its peer group?" Martin says.

Take the stock of two financial services firms, for example. One might sell for about

\$20, the other for about \$50. The \$20 stock on face value might be cheaper, but let's assume that it has a significantly higher P/E. The better value would be the \$50 stock, Martin explains.

"It's like going to the grocery store and unit pricing," he says. It's similar to paying \$4 for 48 ounces of orange juice vs. \$3 for 24 ounces.

Despite the market's volatility, it does follow some P/E trends. For example, more mature industries, such as the au-

tomotive sector, tend to have lower P/E ratios because they're not expected to grow as quickly as newer industries, such as the software sector. "The higher the number, the greater the optimism that investors are attaching to its future income stream," DeKaser says. There's also more risk attached to the stock.

Another evolving trend is the steep rise in the stock market's overall P/E ratio. Although the historical average is approximately 13 or 14, P/E ratios for the Standard & Poor's 500 reached the low 30s in late 1999 and early 2000 (see chart) — a startlingly high figure that DeKaser calls "unprecedented."

And don't expect the market's ratio to tumble with the economy. That's because the market's P/E historically goes up during an economic downturn, experts say. "It's not because the price of stocks generally goes up. On the contrary, it's because earnings get depressed and fall," explains DeKaser. ▀

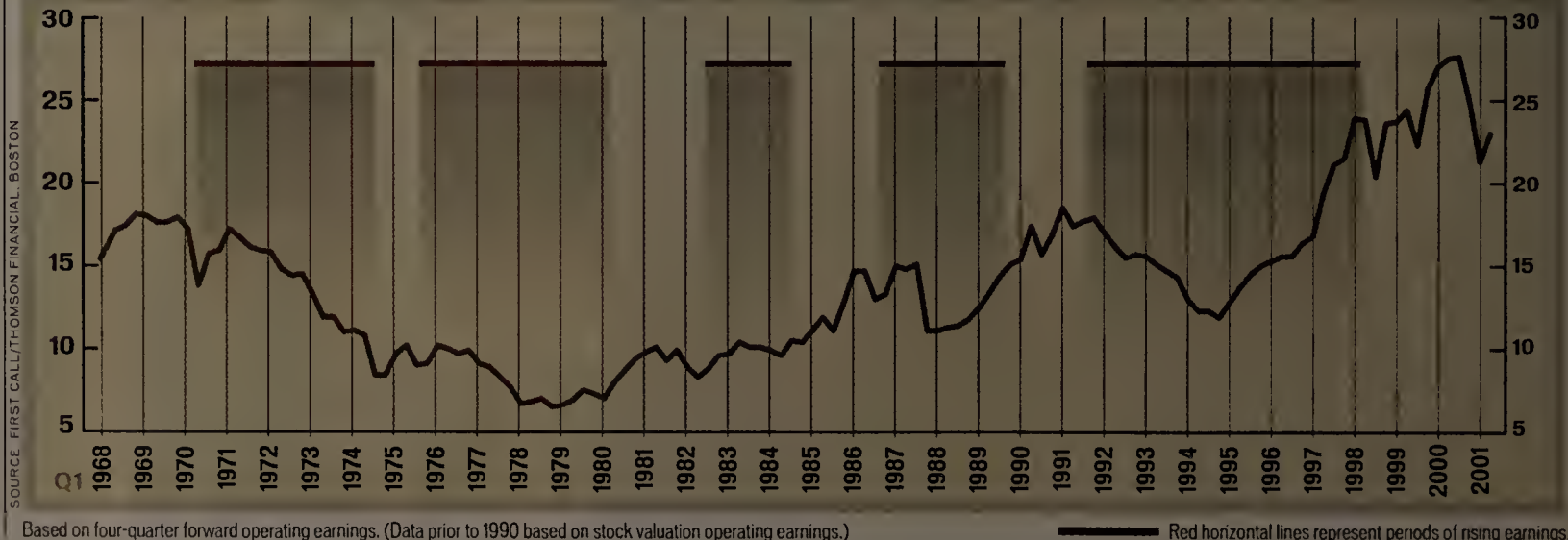
Pratt is a freelance writer in Waltham, Mass. Contact her at markmary@mindspring.com.

The higher the number, the greater the optimism investors are attaching to its future income stream.

RICHARD DEKASER, CHIEF ECONOMIST, NATIONAL CITY CORP.

S&P 500 P/E Ratios

The P/E ratio is a measure used to gauge a company's value. It reflects the value the marketplace puts on a company's earnings and its prospects for generating future earnings. A P/E ratio is calculated by dividing the market price of a common share of stock by its earnings per common share. This chart reflects the P/E ratios for the Standard & Poor's 500 over the past 34 years.



JOE AUER/DRIVING THE DEAL

Gain an Edge From Vendor Presentations

NEGOTIATING A BETTER DEAL is an ongoing process, not an isolated event. One of the steps you can use to turn the process to your advantage is to get a vendor presentation. Savvy IT managers usually require vendors to make presentations of their proposed solutions. A vendor presentation can be an excellent opportunity to gain concessions well before the formal face-to-face bargaining starts.

Here's how: Make it very clear to the potential suppliers that to remain in competition for your business, they must formally present substantive recommendations that prove that they understand your requirements. Also, they must show that they have confidence in their ability to perform and deliver a solution that meets or exceeds your stated requirements. At this point, you are in a position of strength, because a given vendor has yet to win the deal, and vendors will tend to maximize their representations of benefits to you.

To your advantage, vendors will usually make assertions during their presentations to convince you of their capabilities

and ability to deliver. Take good notes on who says what.

For example, a vendor once told me during his presentation that "satisfaction is guaranteed." Later, during face-to-face negotiations, we pressed for a "satisfaction guarantee or our money back" warranty, citing the promise made (and by whom) during the vendor's presentation. The vendor was in the unenviable position of having to make good on that promise or lose face and credibility by reneging.

Vendors that are still in their *sales mode* during presentations tend to embellish their qualifications while sometimes forgetting that *negotiations* are proceeding. This gives you a great opportunity

to position yourself for valuable concessions.

But at this critical juncture, it's also easy to lose your negotiating leverage. If your team gets noticeably excited about a vendor's offering, the vendor will think it has the deal in the bag and become less inclined to offer more assurances or indulgences to win your business.

Remember that vendor representatives are trained in every aspect of account control. They'll pick up on signs of an excited customer and change their stance accordingly by reinforcing a customer's hot buttons while deflecting attention from any areas where their company's offering is weak.

The key to successfully using a vendor presentation for leverage is to become a sponge and soak up information, ask probing questions, verify the answers provided in the vendor's proposal and never show a lot of enthusiasm for a deal.

Vendor presentations may seem mundane (and in IT deals, very technical), but they create equal opportunities to either improve or erode your position. Remember that the vendor is still basically selling while you're actually negotiating, and that creates a great opportunity to turn some sales promises into contract realities.

Avoid Attractive Lease Packaging

Translating a package of prices into "one low monthly payment" is a favorite ploy of many technology equipment vendors. Car dealers have used it for decades on eager, naive customers.

In either setting, if the salesperson can get a customer to focus on an all-

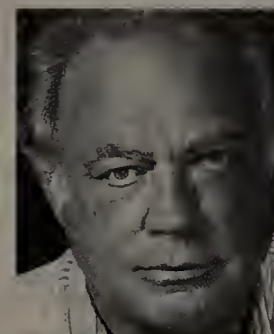
inclusive low monthly price (magically within the customer's budget), there's a good chance he can land the deal quickly without much analysis by the customer.

For lessees, the first step is to separate the equipment

price from the financing. Focusing on the all-inclusive lease quote — instead of optimizing each part by negotiating a purchase and separately negotiating financial arrangements — can be costly. Under the package price, you don't know what the true cost of the equipment is. Second, you don't know the true financing cost. Third, you can't make a fact-based decision about

whether purchasing or leasing gets you the better deal.

Attractive lease packaging can be very expensive. Break the deal apart, negotiate each part and line item, and then assemble the negotiated parts. You'll find that the sum of the parts will total a lot less than the original lease package price. ▀



JOE AUER is president of International Computer Negotiations Inc. (www.dobetterdeals.com), a Winter Park, Fla., consultancy that educates users on high-tech procurement. ICN sponsors CAUCUS: The Association of High Tech Acquisition Professionals. Contact him at joea@dobetterdeals.com.

BRIEFS

GMAC Mortgage to Roll Out New HR System

GMAC Commercial Mortgage Corp. next month plans to roll out Waltham, Mass.-based Authoria Inc.'s HR 3.0 system for use by its 1,800 U.S. employees. The company plans to use the application to streamline its human resources processes, said Andrea Dauphinee, GMAC's HRIS/benefits manager.

The Limits of Wireless

Although the U.S. has had the largest base of cell phone users in

the world, less than \$4 billion dollars in shopping and travel will be transacted on Internet-capable mobile phones in 2006, representing less than 2% of all online shopping, according to a new report by New York-based Jupiter Media Metrix Inc. The report stated that only 7% of consumers want to actually make purchases with a mobile phone. Therefore, Jupiter analysts predict that wireless promotions that can overcome the reluctance of online shoppers will be the key to the mobile commerce strategies that are the most successful.

Printing Firms Merge

Online e-printing vendor iPrint Technologies Inc. is merging with promotional item printer Wood

Associates Inc., whose customers include AOL Time Warner Inc., BP PLC and Compaq Computer Corp. The deal brings together the printing technologies of Menlo Park, Calif.-based iPrint with the wide customer base of Santa Clara, Calif.-based Wood Associates. The all-stock deal is expected to close in the fourth quarter, with Wood Associates becoming a wholly owned subsidiary of iPrint.

Post Turns to New Purchasing Software

The Washington Post Co. announced it will be purchasing payment processing software from Holland, Mich.-based Integrated Systems Development Inc. (ISD). The

newspaper plans to use ISD's Message Sentry software to process any payment type or transaction authorization across all business units, including Web commerce.

Sara Lee Taps ICG

Chicago-based Sara Lee Corp. recently selected ICG Commerce to deliver comprehensive e-procurement services to three of its European divisions: Sara Lee/Douwe Egberts, Sara Lee Meats and Sara Lee Branded Apparel. Under the deal, Jenkintown, Pa.-based ICG Commerce will allow Sara Lee divisions to aggregate purchasing with other European companies and get the best pricing across the U.K., the Netherlands, Belgium, France, Germany and Spain. ICG Commerce, a

procurement services provider, is a unit of Internet Capital Group Inc.

XML Gains Steam

More than 75% of companies surveyed recently by Cutter Consortium in Arlington, Mass., are using XML, and 25% of those are using it in a major project. Of the 272 companies surveyed, 33% said they are studying XML, half said they have used or are using XML in a project, and 17% said they are committed to extensive use of the language. The study concluded that smaller companies are more likely to use XML in a test project and that larger firms are more likely to use it for a major project. When asked about their level of satisfaction with XML, 71% responded positively.

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TECHNOLOGY

RENEWED FOCUS ON EFFICIENCY

SECURITY JOURNAL

As his new employer moves from managed services, security manager Mathias Thurman finds himself building the firm's basic security infrastructure, writing new security policies and creating a virtual private network. ▶ 48

FUTURE WATCH

Internet technology designed for astronomical distances may one day support communications among spaceships, robots and manned and unmanned outposts in the solar system. But it could also help terrestrial users, especially in mobile applications. ▶ 50

EFFECTIVE E-LEARNING

E-learning is a logical extension of existing training programs. But whether they outsource the apps or build them in-house, IT managers face integration issues, aggravated by a lack of standards, that can overwhelm cost savings, practitioners say. ▶ 52

JOB WATCH

Technology workers are being laid off from dot-coms in large numbers. Are these workers the right fit for corporate IT jobs? Computerworld's Julekha Dash asked two technical recruiters for their views. ▶ 58

IN THE SLOWED ECONOMY, companies are looking to manufacturing execution systems (MES) in hopes of increasing efficiency. Concepts like just-in-time manufacturing, build-to-order and end-to-end supply chain visibility, combined with an explosion in contract manufacturing, have revolutionized plant management. MES gives manufacturers the flexibility and tight control they need, but the price tag is steep.

54



"WE CAN HAVE GOODS EN ROUTE to the airport, and the customer calls us requesting a change. These days, you have to go out of your way to accommodate such requests," says Mannon Wong, vice president of operations at Netro Corp.

Big Firm's Security Gets Large-Scale Overhaul

As his new employer moves away from managed services, Mathias must begin with security basics

BY MATHIAS THURMAN

UNTIL NOW, I've always worked at dot-coms and small start-ups. Now, I've taken a position at an established company that has been around for more than 40 years. You'd think that we would have our act together when it comes to security, but that's not the case — yet.

My new employer is a Fortune 1,000 company. For many years, it relied on mainframes with dumb terminals at each desktop. A few years ago, the company began using Windows NT desktop PCs and servers. The firm didn't have an in-house IT staff when it made this decision, so it outsourced the whole infrastructure to a consulting organization that has since been acquired by a very large, respected competitor.

The problem with outsourcing almost all of our critical IT and operational infrastructure is that although we may actually own the resources (we bought the hardware and software), we've had no infrastructure in place for administering and maintaining it. Now, several years after the initial PC rollout, our new CIO wants our operation to be totally self-sufficient and to get away from the managed-service business model.

That's where I fit in. The average employee tenure here is 15 years, vs. about 1.5 years at a dot-com. This means that there isn't too much diversity with regard to in-house talent. In contrast, I've held four different positions during the past six years.

Although some might think of that as a sign of instability, my employer sees it as a benefit. I've been exposed to different cultures, personalities, business models, techniques and technologies.

When it comes to security services and products, I generally know what works and what doesn't. I bring my experiences with me, so my current employer reaps the benefits.

There's a lot of work to be done. My new company has no security standards to speak of, and the existing security policies consist of an outdated boilerplate document. If the policies aren't meaningful or if they're vague, they'll end up in a three-ring binder on a shelf until the next audit.

There's no clear understanding of who can access what. And we have no network diagrams, so I have no insight into the logical layout of the network. Without those diagrams, the all-important (but nonexistent) Windows NT Server trust relationships can't easily be determined. We also have no standard baseline desktop PC image, so there's no consistency in the desktop or critical server operating system deployments.

Yes, it's surprising that a well-respected consulting organization didn't handle things better. I imagine that part of the problem stems from its acquisition by a larger competitor.

However, I had a chance to talk to the security representatives from the new organization, and they seem to be competent and on the same page as us regarding what needs to be done to make this environment more secure.

To make matters worse, today I discovered our Windows NT desktops are still running Service Pack 4! I know that even though my responsibilities are supposed to be focused on architecture, I'll have a significant input into the other aspects of information security. My boss comes from a Big Five consulting background, and we generally agree about what needs to be done.

I'm starting by helping to establish a data-transfer policy and by setting some standards. The company has been transferring customer data to third parties over the Internet without encrypting files or using a secure transport mechanism such as a virtual private network (VPN) or encrypted file transfer protocol session.

I've begun writing the data-transfer policy and chose Santa Clara, Calif.-based Network Associates Inc.'s PGP as our encryption standard. PGP is becoming more popular, and many vendors are including plug-in compatibility with this technology. The vendor's E-Business Server lets users encrypt files by either using public-key encryption or creating a self-decrypting archive.

The policy I'm writing simply states that any sensitive data leaving the company must be encrypted. I'll also include details regarding levels of sensitivity and key lengths.

VPN Choices

Next up is the VPN issue. For years, my company has been spending thousands of dollars per person for a toll-free number and metered dial-up service that terminates in our data center. We're being charged by the minute for usage. With many people using the lines, the charges accrue easily into many hundreds of thousands of dollars — perhaps more. A VPN will let people connect securely through the public internet by making a local phone call and will save a large amount of money in a very short time.

To set this up, I need a VPN gateway and client software to communicate with the gateway so that the encrypted tunnel can be established and Internet Protocol traffic can flow. I also have training, compatibility, performance, support and maintenance issues to deal with, and those aren't trivial. But the basic architecture isn't brain surgery.

My company has decided to use a Contivity VPN switch from Brampton, Ontario-based Nortel Networks Corp. I'm a die-hard fan of Check Point Software Technologies Ltd., however. Perhaps I should try to sway management to consider Check Point's VPN-1 sys-

THISWEEK'S GLOSSARY

Self-decrypting archives (SDA):

SDAs are similar to self-extracting archive files in that the recipients don't need special software installed on their computers to decrypt the file. The sender simply creates the encrypted archive using a session key and chooses a passphrase. The recipient executes the file and must enter the same passphrase to view the file.

Public-key infrastructure (PKI):

This encryption methodology requires that both parties create both public and private cryptography key pairs. The encryption keys are public, but only the holder of the decryption key can read the messages.

LINKS:

http://msdn.microsoft.com/library/psdk/crypto/aboutcrypto_9ib7.htm: Visit this Microsoft Corp. site for a detailed explanation of public- and private-key pairs.

www.pgp.com/products/freeware/default.asp: If you're interested in experimenting with public- and private-key technologies, you can download a copy of Network Associates' PGP software for free, but only if it's for personal use.

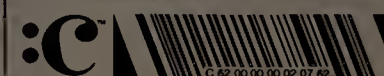
www.checkpoint.com/products/vpn1/index.html: Check Point's Web site includes information about its VPN-1 product line.

www.nortelnetworks.com/products/01/contivity/index.html: Visit Nortel's site for information about the vendor's Contivity VPN switch.

tem. The Israel-based firm makes a great product, and I'm familiar with it. But then, I have heard some good things about the Nortel product. Should I broaden my horizons and go with Contivity?

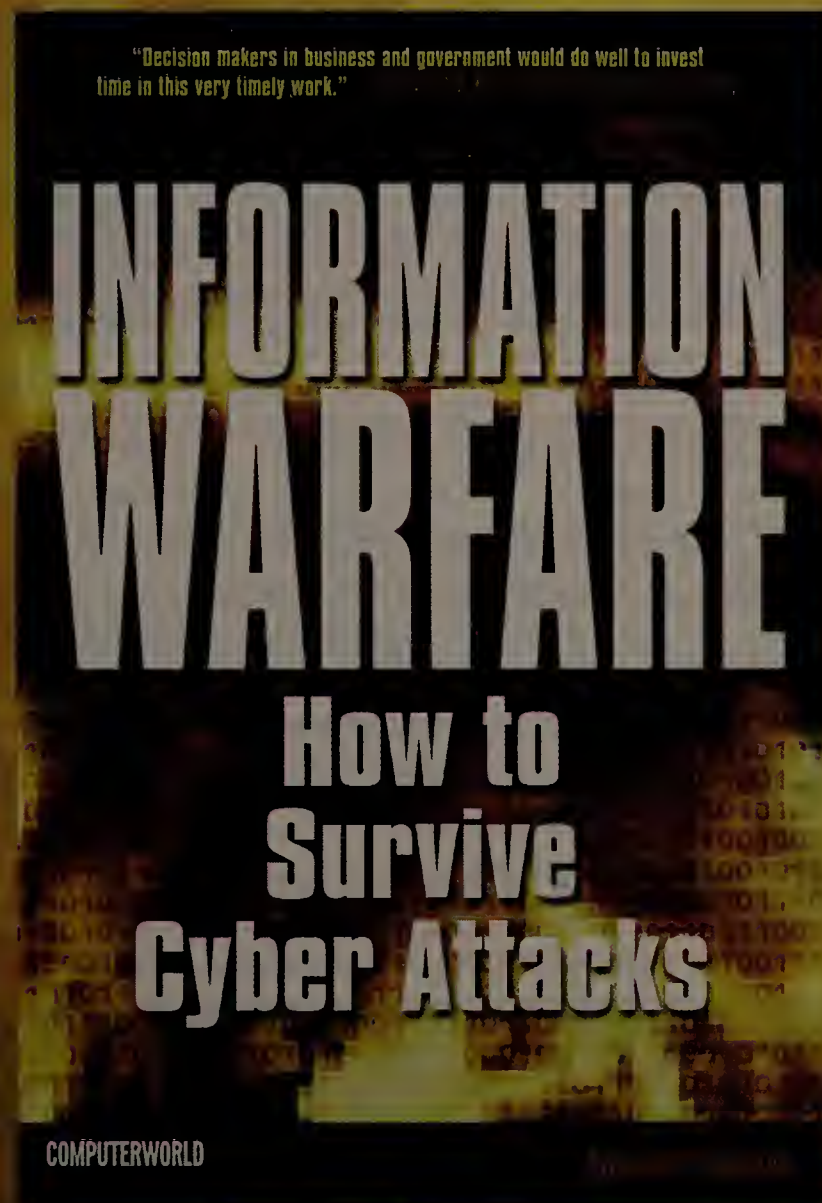
Perhaps readers can help me out by sharing their experiences in the Security Manager's Journal forum. ▀

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COMPUTERWORLD

Internet To Mars

Internet technology designed for astronomical distances could help terrestrial users as well. By Gary H. Anthes

THE MINING OF asteroids, space-based hotels, zero-gravity manufacturing and medicine — they're all part of the future commercialization of space, according to a joint government and industry group that's developing the InterPlaNetary (IPN) Internet.

Starting this year, with NASA funding, the IPN will roll out in pieces over the next several decades to support communications among spaceships, robots and manned and unmanned outposts in the solar system.

"It's conceivable that the IPN could go like its terrestrial counterpart, starting out as a network supporting scientific research and eventually evolving into something of commercial interest," says Vinton Cerf, senior vice president of Internet architecture and technology at WorldCom Inc.

Cerf co-invented TCP/IP in 1973 and is often called a "father of the Internet." He got the idea for an interplanetary extension of the Internet in 1997 and is now working with engineers at NASA's Jet Propulsion Laboratory (JPL) in Pasadena, Calif., to make it real.

"I started thinking about the past 25 years as the Internet evolved, and I thought, 'Gee, what should we be doing now so that in another 25 years, we are ready for whatever's coming?'" Cerf explained.

The protocols, software and hardware developed for the IPN will benefit terrestrial internet users, especially in mobile applications, Cerf says.

Protocols like TCP are unat-

tractive for use in space because they're "chatty" — they depend on near-real-time exchanges between communicating parties. But a message can take 40 minutes to travel between Mars and Earth. The large distances also limit bandwidth and introduce high error rates.

"Size, weight and, most of

all, power are supreme challenges for space-based communication systems, as they are for ground-based mobile systems," said the NASA-led IPN Research Group in a paper published in May.

Cerf says the IPN will be a "network of

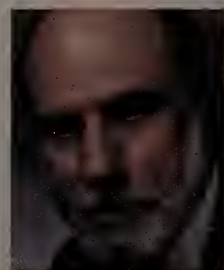
internets," in which ordinary internets are interconnected by a store-and-forward "overlay" network that forms a backbone across interplanetary space. Each internet's protocols will be terminated at its local gateway, and a new "long-haul transport" protocol will communicate between gateways. A new, end-to-end "bundle" protocol will operate above the transport layer to

carry information from a gateway on Earth to one on Mars, for example.

Bundling is intended to eliminate the chattiness of local protocols. For example, a file-transfer request bundle might contain the user's password, the location of the file to retrieve and the address to which it is to be delivered.

These concepts may have applications on Earth as the terrestrial Internet becomes increasingly Balkanized, says Scott Burleigh, a senior software engineer at the JPL.

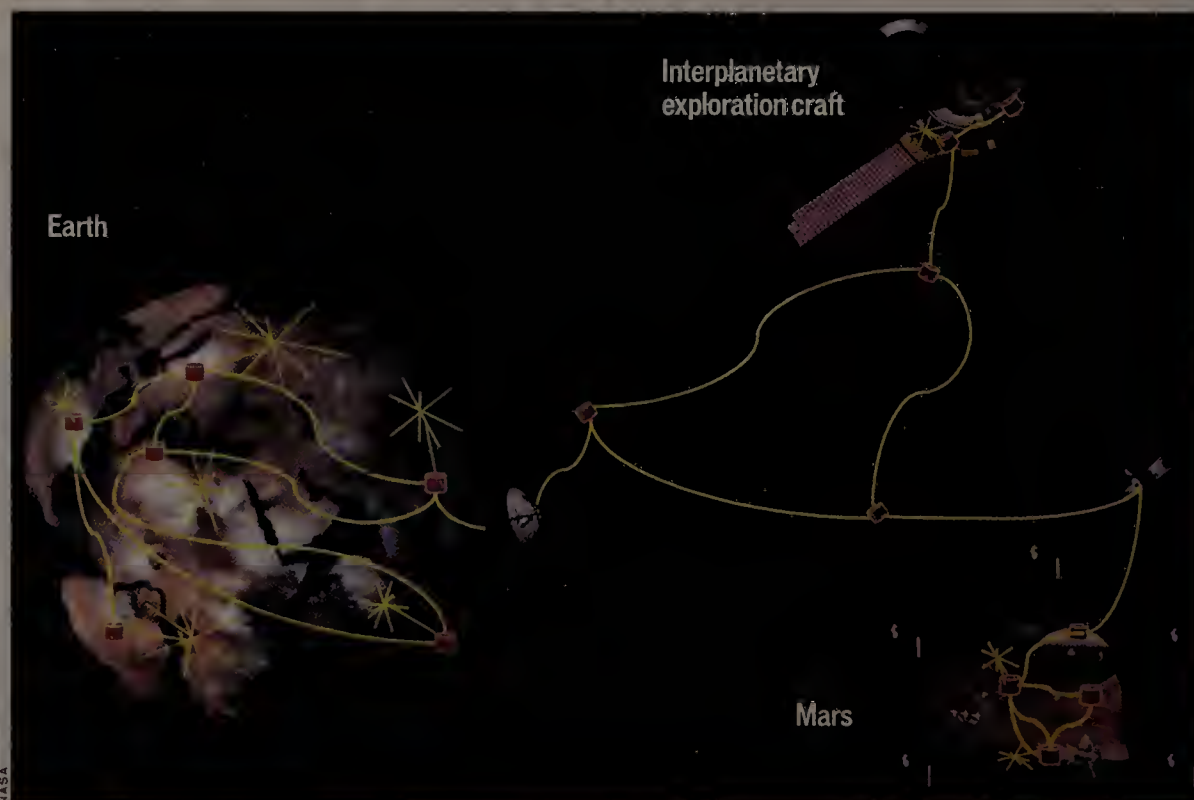
Firewalls and network address translation boxes that sit between the Internet and corporate intranets, along with the proliferation of intermittently connected mobile devices, are introducing some of the challenges of communicating in space, he says. ▀



VINTON CERF: The IPN will be a "network of internets."

InterPlaNetary (IPN) Internet Architecture

The IPN backbone will connect ordinary internets on Earth, Mars and spacecraft. The Mars Network, part of the IPN, will link six satellites, surface rovers and manned stations.



Desiderata of Interplanetary Internetworking

Go thoughtfully in the knowledge that all interplanetary communications derive from the modulation of radiated energy, and sometimes a planet will be between the source and the destination. Therefore, rely not on end-to-end connectivity at any time, for the universe does not work that way.

Neither rely on ample bandwidth, for power is scarce out there and the bit error rates are high. Know, too, that signal strength drops off by the square of the distance, and there is a lot of distance.

Consider the preciousness of interplanetary communication links and restrict access to them with all your heart. Protect also the confidentiality of application data or risk losing your customers.

Therefore be at peace with physics, and expect not to manage the network in closed control loops. Each node must make its own operating choices in its own understanding, for all the others are too far away to ask. Truly, the solar system is a large place and each one of us is on his or her own. Deal with it.

— Scott Burleigh,
senior software engineer,
NASA's Jet Propulsion Laboratory

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CHET ZOLTAK HAS HEARD THE arguments for implementing an e-learning system as a cost-saving measure and agrees there are monetary advantages to delivering training online. But the more important consideration is the learners themselves, he says.

"Our primary driver in implementing e-learning is to get out of the way of people learning. We wanted to avoid continually churning people through classroom training and make training more readily available," says Zoltak, chief learning officer at Towers Perrin Administrative Solutions, a Philadelphia-based division of New York-based management consultancy Towers Perrin.

It's the just-in-time benefits and the resulting business improvements, not cost savings, that represent the true return on investment in corporate e-learning deployments, says Brandon Hall, CEO of Brandon-hall.com, a Sunnyvale, Calif.-based consultancy. What's more, he says, the cost of bringing e-learning systems online initially cancels out operational cost savings.

That's particularly true if the company deploys a learning management system (LMS), which goes beyond basic content delivery to offer course administration, registration, tracking, reporting and skills-gap analysis. LMSs also feature collaboration technology that allows for interactive electronic whiteboards and other interaction between students and instructors over the Web.

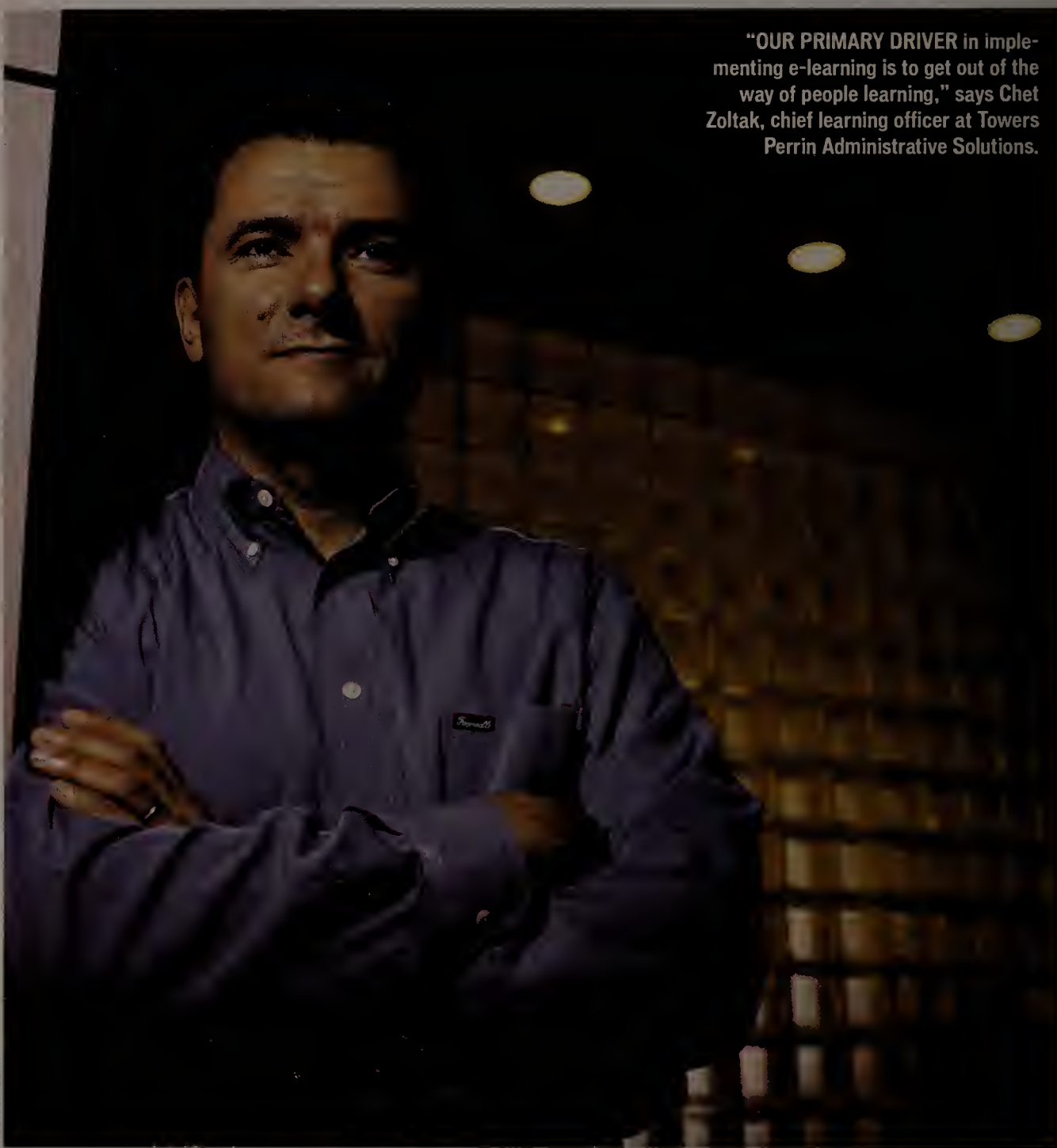
"The cost benefits are significant, with around a 50% cost reduction for delivering a course via e-learning vs. instructor-led classroom training," says Hall. "But that percentage doesn't account for the start-up costs, which include implementing an LMS, finding a vendor to deliver content and getting IT to bring everything together."

An LMS should connect to appropriate back-end databases and human resources systems so that training managers and human resources personnel can track course and career progress, says Hall. If the organization intends to extend electronic training to customers, partners and suppliers, the system needs to run through an e-commerce extension and provide for access through outside firewalls. And if the organization is a global enterprise, it will need to replicate databases across the countries in which it does business, he says.

Think Big, Start Small

In Towers Perrin's case, corporate imperatives to support a global enterprise and better validate employee skills demanded the purchase of an LMS, according to Dave Bill, the company's manager of learning technologies. The old system lacked integration between the company's online training interface and back-end database, so all test results had to be entered manually.

Deciding which LMS to purchase came down to standards compliance, to ensure that third-party content would interact with the LMS database. Towers Perrin sought compliance with the emerging specifications from the Aviation Industry Computer-Based Training Committee (AICC), whose work on e-learn-



"OUR PRIMARY DRIVER in implementing e-learning is to get out of the way of people learning," says Chet Zoltak, chief learning officer at Towers Perrin Administrative Solutions.

Making E-Learning Effective

ing standards for the aviation industry has been a benchmark for the broader e-learning industry. (See "Emerging Standards for E-Learning" at right.)

"Many [vendors] said they were AICC-compliant, but they essentially took your request to launch something online and sucked it into their proprietary code. So every time we created a new learning activity, there would have been lots of maintenance on IT's part," says Bill.

One vendor that could prove compliance was Bellevue, Wash.-based Click2Learn Inc., says Bill. Towers Perrin now uses the vendor's Ingenium LMS to automatically post employee test scores to a central data repository for tracking and planning.

Though the AICC and other standards bodies are emerging, the current lack of learning standards and the resulting incompatibilities between LMSs, third-party content and course-authoring tools mean companies should move slowly on e-learning efforts, Hall says.

"Corporations should start small, buying some off-the-shelf content," he says, adding that several providers aggregate content that can be accessed through hosted services. If successful, a company can then choose to purchase an LMS to manage both classroom and online training programs.

LMSs also show what's working for the organization, says Hall. "More than once, an LMS has clued training managers in to the fact that the 1,200-course library they bought is overkill for their needs, and this keeps vendors accountable," he explains.

Management vs. Content

For Gary VanderHeiden, manager of information systems data management at Grand Rapids, Mich.-based Metropolitan Health Corp., the "bare-bones LMS" he gets through his hosting contract with Rochester, N.Y.-based content provider Element K LLC is sufficient to manage the e-learning component of the hospital's IT training program.

"I can run reports and see who took what courses, but... our primary objective was to get their learning content," says VanderHeiden.

Eventually, he wants to manage all training content through the hospital's existing LMS, OnTrack, from Chicago-based DKSystems Inc. OnTrack is currently used primarily to manage clinical, classroom-based training.

Content-management issues have likewise been a concern for health care services provider Kennedy

Health System in Voorhees, N.J. The provider has purchased an LMS from Billerica, Mass.-based Thing Learning Solutions Inc. as part of an enterprise push toward self-service e-learning for its 3,200 employees, and it also uses some of the vendor's content. However, the nature of Kennedy's business means it relies heavily on third-party health care content, which Thing doesn't offer.

"While Thing has a huge library of courses, they don't provide the health care material we need. And the major health care content provider wants us to buy their LMS," says Chuck Naughton, Kennedy's corporate director of training and organizational development. The health care provider has been reluctantly negotiating with Thing to allow access to its content through the latter's LMS, he adds.

Because of such problems, many organizations choose to leave the e-learning deployment headaches to content aggregators and other e-learning technology providers. New York-based public relations giant Hill & Knowlton Inc., for example, has outsourced delivery of its core service e-learning modules to Atlanta-based Medialst primarily because of the complexities of delivering the rich media and live instructor-led models that it needs.

"By outsourcing to Medialst, all our employees need is a browser and a fast connection to take advantage of video streaming. They've got the skills and the hardware, so we don't have to deal with that," says Graham Stoddart-Stones, Hill & Knowlton's CIO.

Outsourced hosting makes sense in such scenarios, says Hall, adding that the model allows users to have immediate access to large amounts of content without installation headaches.

However, many of the training and IT executives Hall has surveyed say they're wary of allowing personnel data outside corporate firewalls, so they develop custom course content that doesn't lend itself to a hosting model.

Finally, Hall says, the argument that hosted systems eliminate IT problems is overstated. "Even if you host e-learning outside, IT still needs to be heavily involved, particularly on the user end," he says. "A hosted solution should not be chosen as a way to go around the IT department. They should be involved in these decisions from the get-go." ▀

Gilhooly is a freelance writer in Falmouth, Maine.

Emerging Standards for E-Learning

ADL SCORM:

The **Advanced Distributed Learning Sharable Content Object Reference Model** is a U.S. government effort to define interoperable, object-based e-learning systems for government training materials. The specification incorporates pieces of the AICC and IMS specifications (see below).

www.adlnet.org

AICC:

The **Aviation Industry Computer-Based Training Committee** in Sugar City, Idaho, was originally formed to standardize training material for aircraft manufacturers and buyers and is influencing e-learning through its specification efforts on LMSs and learning objects.

www.aicc.org

IEEE LTSC:

The **Learning Technology Standards Committee of the Institute of Electrical and Electronics Engineers Inc.** in New York, which has 20 different working groups, is defining specifications for learning object metadata, lesson sequencing, computer-managed instruction and content packaging.

www.ieee.org

IMS GLC:

The **Instructional Management System Global Learning Consortium** in Burlington, Mass., which has educational, commercial and government members, is developing specifications for content packaging, testing mechanisms and content identification.

www.imsproject.org

Online learning frees employees to take classes anytime and anywhere and costs less to run than classroom training. But integration problems can wipe out those initial cost benefits. Better standards to make integration easier are on the way but don't help yet. By Kym Gilhooly

ONCE UPON A TIME, manufacturers operated on a simple build-to-stock model. They built 100 or 100,000 of an item and sold them via distribution networks. They kept track of inventory and made more of the item once stocks dipped below a threshold. Rush jobs were both rare and expensive, and configuration options almost as limited as "any color as long as it's black."

Things have changed. Concepts like just-in-time manufacturing, build-to-order (BTO), end-to-end supply chain visibility and the explosion in contract manufacturing have revolutionized plant management.

"We can have goods en route to the airport, and the customer calls us requesting a change," says Mannon Wong, vice president of operations at San Jose-based Netro Corp., a manufacturer of broadband wireless access systems. "These days, you have to go out of your way to accommodate such requests."

Netro copes with the need to incorporate that kind of flexibility into its manufacturing processes by using a Web-based manufacturing execution system (MES) from San Jose-based Datasweep Inc. The MES helps the company maintain tight control over an operation in which 99% of manufacturing is outsourced and which was designed to let customers adjust hundreds of possi-

ble product configurations up until final delivery.

MES evolved during the 1980s and '90s as a staple of semiconductor fabrication plants and big aerospace and pharmaceutical concerns. But at \$500,000 to \$2 million per installation, the technology remained in the hands of big manufacturers and big government. As the name suggests, MES was originally designed to allow better management of production within a single factory.

Then, a series of changes pushed MES off the radar: The move from build-to-stock to BTO placed attention on the order end of the manufacturing equation, driving the broad adoption of enterprise resource planning (ERP) and customer relationship management (CRM); an increasing dependency on contract manufacturing necessitated tight integration with suppliers using supply chain management (SCM) software; and the arrival of the Internet sent companies scurrying to develop a Web presence and e-business applications.

Kevin Prouty, an analyst at AMR Research Inc. in Boston, says he's seen a revival of interest in MES; he attributes the turnaround to the economic downturn and the evolution of MES technology. For several years, companies focused on external-facing systems. But the moment the technology bubble burst, many firms suffered an immediate introversion. Attention shifted back to internal efficiencies, and MES regained its allure.

All the attention on the order-taking side created an imbalance. Companies could now accept orders, coordi-

REDISCOVERING EFFICIENCY

After years of looking outward with CRM and ERP systems, manufacturers are turning inward to make factories more flexible, efficient and competitive. By Drew Robb

nate supply chain logistics and communicate with customers like never before. This exposed the weakest link — visibility of the manufacturing floor. And that's where MES comes in.

MES has evolved from an inflexible, monolithic offering for the elite few into a collaborative tool that reaches beyond the walls of a single factory. It exposes shop-floor data from any of a company's manufacturing plants to anyone in the supply chain. While ERP addresses what has happened (historical and financial data) and SCM deals with what will happen, MES fills a critical gap — what's happening now.

For example, customers such as Murray Hill, N.J.-based Lucent Technologies Inc. and Espoo, Finland-based Nokia Corp. hold Netro accountable for constant changes in orders for goods that aren't even produced on its premises. Such a BTO model requires that manufacturers have a clear and detailed picture of each order and of the individual products within the order as they move through the production cycle. Only with that knowledge is it possible to make changes to configurations on short notice. Without MES, companies don't have the ability to respond at the pace demanded by today's customer.

But MES isn't just attractive to virtual manufacturers with widely dispersed operations. Almost anyone in the BTO space will find MES attractive, particularly since MES module pricing has dropped to less

“

We can have goods en route to the airport, and the customer calls us requesting a change. These days, you have to go out of your way to accommodate such requests.

MANNON WONG (BELOW),
VICE PRESIDENT OF OPERATIONS, NETRO CORP.

than \$100,000 for small plants, says Prouty.

“We needed MES to gain immediate visibility into operations for real-time inventory control, yield improvements and cycle-time reduction,” says Doug Barnes, IT manager at Lightwave Microsystems Corp. in San Jose. Lightwave manufactures planar lightwave circuits and integrated devices for optical communications systems. It uses InSite, a modular

MES Windows NT application from Camstar Systems Inc. in Campbell, Calif., for data collection, traceability, process control, yield management and work-in-process tracking in one facility that handles multiple functions.

Lightwave previously used a homegrown access-based engineering database with simple tracking capabilities. Supervisors had to walk onto the plant floor, inspect the production line, update the sheets daily and manually enter numbers into the database.

“As everything was manual, we tended to question the validity of data, rather than act on it,” says Barnes. “Management was largely in the dark.”

He attributes early implementation problems to an immature manufacturing model — the optical communications industry was new and it took time to figure out the basic architecture for the system. How exactly would Lightwave's ERP system, Epicor Platinum from Epicor Software Corp. in Irvine, Calif., integrate with InSite, and where should key data reside?

The company asked consultants to modify and extend ERP to contain product and bill-of-material data and feed this to the MES system via a homegrown interface using Visual Basic and SQL.

Result: a 15% increase in line yield, 20% better chip yield and a doubling of on-time delivery.

“The visibility we're getting into our operations represents an enormous competitive advantage,” says Barnes. “Now, we can make better business decisions by looking directly at our work-in-process inventory status, increase yields by identifying and classifying failure mechanisms and detect bottlenecks that may have been preventing us from achieving maximum manufacturing throughput.”

Lightwave's use of Visual Basic and SQL, however, is a stopgap; the company wants to migrate to a Web-based platform using a soon-to-be-released Epicor-developed XML interface.

XML, in fact, appears to be emerging as an interoperability standard among business systems. “XML provides the glue to bring all systems together,” says Greg Sowle, vice president of operations at Camstar.

Prouty, though, cautions against focusing on XML. MES is growing swiftly among automotive and other traditional manufacturers — industries that can't go all out with XML because many of their suppliers and customers have an investment in electronic data interchange-centric infrastructures.

Still, MES usage is expected to reach \$4.2 billion by 2004, up from \$2.75 billion last year, according to AMR. Much of that growth will come from bit-and-piece MES deployments, with plants harnessing the MES modules they need, rather than deploying expensive enterprisewide systems.

Acma Computers Inc., a Fremont, Calif.-based PC manufacturer, for example, bought only Datasweep's manufacturing tracking module. “Our core need was for manufacturing tracking,” says Acma President Allen Lee, adding that the company's PeopleSoft ERP system could adequately perform receiving and return merchandise authorization functions. ■

Robb is a freelance writer in Tujunga, Calif.

MOREONLINE Read more about Netro's MES system.
www.computerworld.com/mes



SETH AFFOUMADO

Ixiasoft Speeds Access to XML Data

Vendor's TextML database is optimized for handling documents in XML format

BY AMY HELEN JOHNSON

BILL BEAN, vice president of business development at American LegalNet Inc., needed a high-performance database to serve up 170,000 files to more than 1 million users per month. The catch was that the Encino, Calif.-based online supplier of electronic legal forms kept its files in XML format.

After some comparison trials that pitted relational databases against the TextML native XML database from Canadian start-up Ixia Inc. (known in the U.S. as Ixiasoft), the company went with the latter. Speed tests showed that the native product was at least 30% faster.

"It's fast, and it works," says Bean, whose Web site, www.uscourtfirms.com, went live in January.

Faster XML

What makes TextML faster than a relational database, says Ixiasoft CEO Philippe Gelinas, is that it keeps information in original XML documents, rather than breaking it down into pieces and storing it in tables and cells as relational databases require. That conversion step is a significant performance drain, he says. In addition, the rigidity of relational database structures makes modifications to accommodate changes in the XML document structure a complex process.

"[A native XML database] is a solid technology for managing for XML," says Nick Wilkoff, an analyst at Forrester Research Inc. in Cambridge, Mass. XML files are designed in a hierarchical fashion, which is difficult to map to a relational database's

table structure, he explains.

But according to Wilkoff, the challenge for Ixiasoft is making a native XML database the preferred choice over relational databases for managing XML data. This could be a difficult idea to sell to IT departments that have a large investment in relational database infrastructure and programming skills.

Another challenge is to

emerge as the industry leader in this niche. "In some ways, they are a small fish in a small pond," with a few dozen customers and a limited number of partners, Wilkoff says.

To build critical mass, the company needs to seek out integrators and content-management vendors looking for a repository architecture for XML data stores. These are the types of implementation companies from which enterprises ask for help with their XML projects, Wilkoff explains.

TextML runs on a Windows NT 4.0 or Window 2000 serv-

er. Since the product relies on some features of the Windows operating system that are hard to duplicate on Unix, support for Unix is still up in the air, Wilkoff says.

TextML functions as a black box, so developers must build an application around it so end users can retrieve XML data, says Gelinas. Ixiasoft supplies an application programming interface for developers to build those applications, based on Microsoft Corp.'s COM+. The product will also support Microsoft's .Net Web-based services initiative.

"It's an easy fit if you're already a [Microsoft] developer," Gelinas says.

The product also works with the Simple Object Access Protocol and Universal Description, Discovery and Integration business directory service, which positions TextML for use in XML Web services, he says.

Coming Soon

As more industry associations create their own XML vocabularies, Ixiasoft has an opportunity to help its customers by supporting these emerging standards, according to Bean. In his case, Bean says, he'd like the work Atlanta-based LegalXML Inc. has done developing XML standards for the legal profession to be built into TextML.

The next release will raise the limit on index size, add Unicode support to indexes for multilanguage capabilities and add data types that will allow search functions common to SQL databases, like numeric, in-range and time searches, according to Gelinas. The company is also exploring add-ons for specialty markets, such as tool kits and libraries for document management applications.

Ixiasoft's ultimate goal is to make XML databases ubiquitous, claims Gelinas. "Ideally, we hope to get them to be as common as SQL databases," he says. ▀

Johnson is a Computerworld contributing writer in Seattle.

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Relational Resistance

Ixiasoft's strongest competition comes from traditional relational database vendors like Oracle Corp., says Forrester analyst Nick Wilkoff. IT personnel are already familiar with those companies' tools, and instead of training staff on a new technology like native XML databases, enterprises are likely to adapt their existing relational databases for use as XML repositories, he says.

Whatever the approach, IT managers will have to pick a technology strategy for managing XML data. According to Forrester's research, 18% of the Global 3,500 use XML documents regularly, and an additional 35% are involved in pilot projects or are rolling out the technology. "XML is catching on as the lingua franca for data transfer and the reuse and repurposing of content," says Wilkoff.

The challenge companies like Ixiasoft and its competitors are facing is shepherding the native XML database technology into the forefront as the industry standard for XML storage needs, explains Wilkoff.

"But it's a pretty big wall for them to have to climb over," he says.

Software AG

Darmstadt, Germany
www.softwareag.com

Software AG markets its Tamino XML database to large enterprises, with a price that makes it less attractive to the midsize businesses Wilkoff says he sees as Ixiasoft's customer base. Tamino also supports a wider variety of platforms, including IBM's AIX, Linux for IBMS/390 mainframes and Sun Microsystems Inc.'s Solaris.

XML Global Technologies Inc.

Vancouver, British Columbia
www.xmlglobal.com

XML Global focuses on integrating data within existing applications and databases by transforming it into a native XML data set. GoXML Transform includes a native XML database, GoXML DB. TextML and GoXML DB differ in their technical implementation; TextML is built around Microsoft's COM+ technology, while GoXML DB uses Java.

—Amy Helen Johnson



"IDEALLY, we hope to get [XML databases] to be as common as SQL databases," says Ixiasoft's Philippe Gelinas.

Ixiasoft

825 Querbes Ave., Suite 200
Outremont, Quebec H2V 3X1
(514) 279-4942

Web: www.ixiasoft.com

Niche: Native XML database that handles XML documents more efficiently than relational databases

Company officers:

- Francois Aird, chairman
- Philippe Gelinas, co-founder and CEO
- Eric Bergeron, co-founder and chief operating officer

Milestones:

- 1999: Founded as a subsidiary of Cedrom-SNi
- December 1999: Ixiasoft spun off; first product released
- January 2000: Received first round of funding
- December 2000: Received second round of funding
- March 2001: TextML Version 1.6 released

Employees: 39

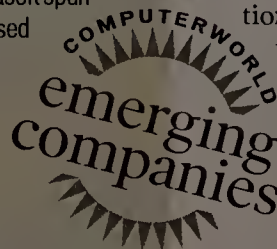
Burn money: \$6.5 million from Cedrom-SNi, Fonds d'Investissement Desjardins de Montreal, Investissement Desjardins, Shaw Ventures Inc. and Schneider Electric Ventures

Products/pricing: TextML Server, \$10,000; XMetal Macros, free

Customers: American LegalNet, AT&T Corp., Rochester Gas & Electric Corp., Tribunaux Administratifs du Quebec, Council on Foreign Relations Inc. and others

Red flags for IT:

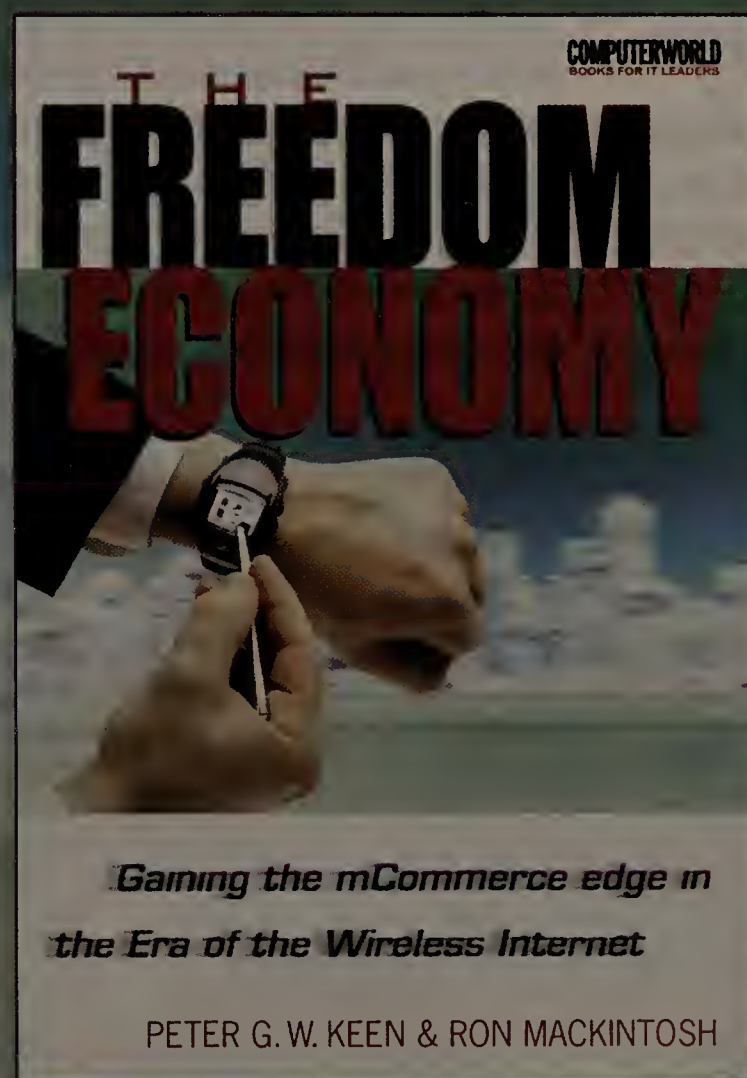
- It may be easier to adapt a relational database for XML use than to retrain on a new technology.
- TextML runs only on Windows NT and 2000 servers.



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Hiring the Dot-gone

Technology workers are being laid off from dot-com companies in large numbers. Are these workers the right fit for corporate IT jobs? *Computerworld's* Julekha Dash asked two technical recruiters for their views.

NOT VERY long ago, prized IT workers were besieged by calls and e-mails from recruiters and hiring managers and had their pick of job offers.

Now, as layoffs escalate, some technologists say they're lucky to have recruiters even return their phone calls.

Companies that are still aggressively hiring IT workers

have more candidates to pick from than they did a year ago. But choosing from the pool of former dot-com workers can be tough. Work habits at traditional companies differ greatly from those at the often undisciplined dot-com start-ups.

Computerworld asked two recruiters — **Michael Zinn** from Michael D. Zinn & Associates Inc. in Princeton, N.J., and **Shawn Galloway** from Genera-



If the position you are looking [to fill] is real team-oriented, you [ask them] if they are used to working by themselves.

SHAWN GALLOWAY,
GENERATION I.T.

tion I.T. Inc. in Houston — to give their advice about how to hire in this ever-changing job market.

What are the best sources for finding laid-off workers?

GALLOWAY: Going to the companies and asking them for a list. There's really a lot of ways to do it. Lots of [recruiters] are going to tech fairs nowadays. A lot of companies offer outplacement services. Some organizations [offering job-hunting assistance] have meetings once a month where you can network and share resources.

How do you select the right person for your company?

GALLOWAY: Before we submit anybody [to our clients], we interview everybody and do reference checks. You just have to talk to co-workers. Just do as much as you can on background checks. You go through a lot of questions and answers. If you're a traditional company [where] workers wear suits and ties, you ask them if they've been used to that. If the position you are looking [to fill] is real team-oriented, you [ask them] if they are used to working by themselves.

ZINN: You have to determine who you are in terms of your [company] culture. Dot-com workers are good at branding, are entrepreneurial. A lot are tech-savvy and innovators.

As a manager, you want to hire someone who is going to stay with you even if the market comes back. You have to determine whether they can work in an environment that is more structured but can retain the technology savvy they got through the dot-com world. Former dot-com workers are in a perfect position to create Web-based applications. [Look for] someone who has been in the Fortune 500 world and a dot-com.

For employers, what should you look for on a résumé from a person who has been laid off from a dot-com company? How do you know whether they can fit into a more traditional environment?



You have to determine whether they can work in an environment that is more structured.

MICHAEL ZINN,
MICHAEL D. ZINN & ASSOCIATES



ZINN: Look for a period in their life when they have been with a traditional company and the length of time. Maybe that person is more risk-averse and would be more comfortable working [for a brick-and-mortar company].

Employers should be wary of any employee who has only been in a dot-com company. To me, the best person out there for a traditional corporate environment is maybe somebody who has spent five to seven years in a traditional environment, then spent some years in a dot-com environment.

GALLOWAY: Look for how long they've been laid off. Look for lapses in time and why they're being laid off. It depends on the project [you need someone to work on]. If a worker went from a Fortune 500 company to a dot-com, I'd ask them why they did that. It makes them more of a risk taker. Maybe they'd work a little bit harder. ▀

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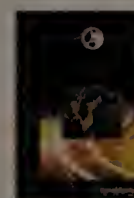


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Programmer/Analyst. Location: Parsippany, NJ. Duties: Under supervision of Principle Engineer, assist in planning, developing, testing & documenting computer programs using C++ & Java. Research & assist in implementing new technologies towards improving the overall quality of company products. Assist in formulating plan outlining steps required to develop computer programs. using structured analysis & design. Under supervision, maintain & improve the code of existing programs. Monitor the performance of programs after installation & report to supervisor on status. **Requires: B.S. Computer Science plus 1 yr., exp. in the job offered or 1 yr. exp. as a Programmer. Exp., which may have been obtained concurrently, must include 1 yr. exp. using C++ & Java. 40 hrs./wk. Send resume (no calls) to: T. Sloan, Zeosoft Corp., 7430 E. Butherus Dr., Suite D, Scottsdale, AZ 85260.**

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SOFTWARE ENGINEER to design, develop, implement, test, maintain and document application software for the wood technology industry using GUI tools, Visual Basic, SQL Server, Oracle, Sybase, Crystal Report, Data Report, API, and ADO under Windows operating system; Design and develop stored procedures and triggers. Require: B.S. degree in Computer Science, an Engineering discipline, or a closely related field with five years of progressively experience in the job offered or in the related occupation of programmer or Programmer/Analyst. Extensive travel on assignment to various client sites within the U.S. is required. Competitive salary offered. Send resume to: Alice L. Bagwell, Baywood Technologies, Inc., 9428 Baymeadows Road, Suite 580, Jacksonville, FL 32256; Attn: Job TM.

Oracle Applications Sr. Consultant. Job location: San Francisco, CA. Duties: Design, implement, integrate & set-up Oracle Applications & Client/Server solutions using Oracle solutions methodology. Analyze, design & develop customizations, reports, interfaces w/prod. systems & conversion from legacy systems using Oracle Database, Oracle Web Application Server, SQL, PL/SQL, Developer 2000 & SQL *Plus & perform system admin of Oracle Appl. system. Provide tech. support for interfaces between disparate systems. Requires: B.S. (or foreign equiv.) in Comp. or Info. Sci., Eng. or related field & 4 yrs. exp. in the job offered or 4 yrs. exp. as a Software Eng., Prog./Analyst or Prog. Exp., which may have been obtained concurrently, must incl.: 4 yrs. exp. designing, implementing & setting-up Oracle applications & 2 yrs. exp. developing customizations using Oracle. EOE. 40 hrs/wk.; 8:00 a.m. to 5:00 p.m. Salary: \$83,000/yr. Send resume (no calls) to: Diane Tuccito, Answer-Think, Inc., 817 W. Peachtree St., Suite 800, Atlanta, GA 30305. Must have legal auth. to work in U.S.

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Microsoft

programs. So when someone goes ahead and updates Internet Explorer, it cripples the system," said Fox, who would like to remove the browser from some computers. Microsoft's plan to cut off Internet Explorer access points "will help, but not as much as being able to remove it," he said.

Microsoft continues to maintain that it's impossible to remove Internet Explorer from the operating system.

The increased flexibility for PC makers will nonetheless help rival vendors such as America Online Inc. and Seattle-based Real Networks Inc.

"I think it's a big deal," said Roger Kay, an analyst at IDC in Framingham, Mass., adding that PC makers may be able to differentiate themselves from one another through their choices of software.

But Jim Easton, IS director at Air Industries Corp., an aircraft parts maker in Garden Grove, Calif., said the improved flexibility offered to PC makers will help only if it involves applications that he needs, such as improved remote access functions. "It depends on what they are [and] if they give us more robust products," he said.

Microsoft acknowledged that it was making the changes in reaction to the June 28 decision by the federal appeals court, which upheld a lower court's ruling that the company used illegal means to maintain the monopoly status of Windows and that provisions in the licenses the company required PC makers to sign impaired the competitive chances of rival Web browsers.

"We recognize that some provisions in our existing Windows licenses have been ruled improper by the court, so we are providing computer manufacturers with greater flexibility,"

Microsoft CEO Steve Ballmer said in a statement. He added that the changes are being made right away in an attempt to avoid any effect on the planned Oct. 25 release of Windows XP.

Microsoft faces the possibility that legal action concerning XP could be brought by competitors in the wake of the appeals court decision. With last week's announcement, Microsoft may be trying to pave the way for XP and to limit the extent to which the operating system gets caught up in the antitrust case, said Yee Wah Chin, an antitrust attorney at Mintz Levin Chohn Ferris Glovsky and Popeo PC in

Washington. "I think it would diffuse a lot of efforts to delay XP," she said.

The vendor's moves also helped persuade one state, New Mexico, to settle with the company, reducing the number of states involved in the case to 18.

Critics of Microsoft characterized the company's announcement as a modest step at best. The problem with the change with respect to Internet Explorer is that it "doesn't really answer the main questions in regard to the other applications" that the company builds into its operating systems, such as instant messaging software and media players, said Stephen D. Houck,

JUST THE FACTS

What's New In Redmond?

INTERNET EXPLORER: Microsoft will allow PC makers to include Add/Remove function. The technology remains in the operating system, and the browser may still launch under some conditions.

PC LICENSING: PC makers will be able to add desktop icons, the prime real estate on the operating system.

LAWSUIT IMPACT: New Mexico dropped out, but 18 states remain, and critics say changes are "baby steps."

lead counsel for the states during the case's trial phase. "It doesn't hurt them substantially because they already won the

browser war," said Houck, who is now an attorney at Reboul, MacMurray, Hewitt, Maynard & Kristol in New York.

As a legal strategy, last week's announcement was "a masterful stroke by Microsoft," said Hillard Sterling, an antitrust expert at Gordon & Glickson LLC in Chicago. "Microsoft will argue that this displaces the need for any additional remedies," he said. "It also shows that Microsoft views these changes as unimportant to its larger product strategies. Microsoft is trying to take the gun out of the government's hands before settlement discussions even commenced." ▀

Continued from page 1

Server Pricing

HP is the first major Unix vendor to offer users the option of using, and paying for, processors as needed, analysts said.

"It is targeted toward users with very specific needs ... those who have modest overall capacity utilization but who require extra capacity to handle sudden bursts in load," said Gordon Haff, an analyst at Aberdeen Group Inc. in Boston.

"The model appears good, assuming you have applications that would utilize [at least] half of the processing power of the Wintel servers to start with," said Bruce Gowan, a senior systems consultant at Toronto-based Canada Life Assurance Co. "If this model applied to lower-end servers, it may be of interest."

"Generally, this seems like a good start into hardware usage-based pricing," said Jim Lackey, a longtime mainframe user and software configuration manager at Information Systems Management Corp., a services provider in Burnaby, British Columbia. But there are several question users need to ask relating to such issues such

as the impact of hardware upgrades, the administration of the scheme, and the availability of tools to simulate usage patterns for users considering the option, Lackey said.

Under HP's new pricing model, users pay both a fixed monthly cost and a variable cost that depends on the actual computing power they use each month. The option is available only on 32-way and 64-way Superdome Unix RISC servers and on HP's IA-32 based L-series Netervers.

Here's how it would work with a 32-processor Super-

dome server: A customer would pay a fixed minimum monthly charge equal to one-half the monthly amount he would have paid for leasing a 32-processor server for 36 months. On top of this, the customer would pay a variable monthly usage fee based on the average maximum daily use of the system.

The option works similarly with HP's Netervers, except that the fixed monthly charge is equal to 75% of the monthly amount a customer would have paid under a three-year lease.

Customers who use less than 50% of the overall capacity of their systems on average each month should see cost savings using this option, said Ian Curtis, an HP marketing manager. For example, a customer with a 32-way system that uses an average of fewer than 16 processors per day would stand to save over a lease option.

But those who use more will end up paying more than they would have if they had simply purchased the system outright or had a conventional lease on it, Haff said.

Under maximum average utilization, a company using a Superdome server could pay 17% more than it would with a three-year lease, Curtis said.

With Netserver, the premium is 20%.

As a result, the Pay per Use option makes sense only in situations where "the costs of not having instant access to extra capacity is very high, where the capacity demand is very unpredictable and where there are significant swings in the peaks and troughs of the capacity demand," Curtis said.

Despite such caveats, HP's move is a bold one and does make sense in some situations, said Ed Cowger, an analyst at Stamford, Conn.-based Gartner Inc.

For instance, it gives application service providers a way to charge their customers based on actual system usage. And it can also make sense in some commercial environments, like retail operations that have low average CPU utilization but need extra capacity three or four times a year to deal with seasonal sales promotions, Cowger said.

The option is also very useful for companies that don't have or don't want to make the capital investment needed to buy systems outright, Daley said. "If you are capital-restrained, this offers the most economical way to procure resources," he said. ▀

Pay per Use

HP's new option is available on 32-way and 64-way Superdome configurations and HP's L-series Netervers only. Here's how it works:

- ▶ HP installs a system at the customer location with usage-metering software.
- ▶ Customer can activate and deactivate processors as needed.
- ▶ Monthly usage information is collected and transmitted automatically to an HP customer usage repository.
- ▶ Special algorithms are applied to determine monthly usage cost.

FRANK HAYES/FRANKLY SPEAKING

Damage Control

ELI LILLY DID just about everything it was supposed to do to protect its customers' privacy. When the company set up its Medi-Messenger e-mail service to remind people to take their medications, the automated system sent the messages as blind carbon copies — the "To:" line was blank. That worked fine for two years — until June 27, when Lilly sent one last mass e-mail to notify users that it was discontinuing the service. Because of human error, that one included hundreds of names — all the Medi-Messenger users — in the "To:" line.

Now *that* was a privacy failure. And it wasn't the worst of it. Because when something goes wrong with privacy, we don't just have

to deal with what happened. We also have to deal with what people *think* happened.

As IT people, it's easy to assume that when something blows up on us — whether because of a technical glitch, operational error, policy mistake or just one of those things — we have to deal only with the problems we actually created. That just makes sense, right?

And that's what Lilly's people did. After that last message went out, complaints started coming in. The company responded individually to every complaint and sent a separate message to all Medi-Messenger users, apologizing for exposing their names. Lilly's IT people also set up new code-review procedures and blocked all outgoing messages with more than one name in the "To:" field.

In short, they cleaned up the mess they made.

But it wasn't enough. One Medi-Messenger user, who used the service to remind him to take his Prozac, was outraged. Now hundreds of other people knew he was taking antidepressants, he thought. He contacted the American Civil Liberties Union (ACLU), which fired off a letter to the Federal Trade Commission accusing Eli Lilly of negligence, deceptive trade practices and violations of Lilly's own published privacy policy.

A week later, stories in *The Washington Post* and other news outlets were quoting the ACLU's letter and focusing on the exposure of Prozac users.

Did Eli Lilly accidentally expose hundreds of Prozac users? No. Not everyone using Medi-Messenger was taking Prozac. True, patients could sign up for the service

through the Prozac.com Web site. But people who don't take Prozac also signed up for the service.

In other words, privacy was violated. But no one was exposed as a Prozac user — just as a Medi-Messenger user.

That's not the mess Eli Lilly created. But it's still a mess that Lilly has to clean up.

There's a lesson here for every IT shop. By now, we should all have contingency plans for dealing with privacy failures. Whether that means customer information exposed on a Web site, names on a mailing list or credit card numbers stolen by crackers, we should already have plans coordinated with our companies' legal and public relations departments for notifying the affected customers, apologizing for the problem and — of course — correcting it.

But privacy issues are special. People are understandably afraid — of credit card fraud, identity theft and having their medical conditions or other personal information exposed. They'll make assumptions about what they fear *really* happened. They'll believe the worst.

When that happens, we've got to be ready with the facts and explanations that the legal and public relations staffs will need to shoot down rumors and allay fears. They'll do the explaining, but we must make sure they've got it right — not just for what happened, but also for what *didn't* happen.

If that's not part of your plan, add it now. Because when it comes to privacy, cleaning up the mess we've made isn't enough. We have to clean up the mess people *think* we've made, too. ▀



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SHARK TANK

TRAVEL COMPANY execs boast they "know all about computers" and are looking for a custom reservation system. Software consultant pilot fish whips through his demo, showing how to take reservations, track inventory and calculate commissions. Then there's an awkward silence. Finally, the general manager pipes up, "Look, when he moves the thing on the desk, the arrow on the screen moves too!"

GO AHEAD, BOTHER ME!

E-mail server crashes over the weekend, and a junior IT staffer happens to be working and notices. But she doesn't want to call the boss on a Sunday morning. Instead, she sends e-mail. "Since our server was down, she e-mailed me from three different accounts on other servers," says her pilot fish boss. "All to my account on the downed server."

WILL YOU TAKE a job that involves 30% travel? recruiter pilot fish asks programmer job candidate. Sure, says the code-slinger, and fish sends him off to

the job interview. When fish asks later why he turned down the job, he replies, "Too much travel." I told you about that ahead of time, fish says. "I thought you meant 30% a year," programmer says. "But they want 30% a month, and I can't do that."

DEMO OF A NEW multiplatform XML tool puzzles pilot fish. The data is on a mainframe in a proprietary database requiring special access software, and sucking up all that data will require a lot of I/O. But the vendor guy wants to run his demo on a different server. Shouldn't the tool run on the same machine as the data, to make the code path shorter? asks fish. "Well," says the demo guy, "the servers are only 30 feet apart!"

Here's my code path: sharky@computerworld.com. You get a stylish Shark shirt — the perfect summer fashion statement — if we use your true tale of IT life. And check out the daily feed and the Sharkives on the Web at computerworld.com/sharky.

The 5th Wave



"Well, it's not quite done. I've animated the gurgling spit sink and the rotating Novocaine syringe, but I still have to add the high-speed whining drill audio track."

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